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सोऽहम् ।

Vol. II

Yoga-Mimānsā

No. 1

EDITED BY **S'RIMAT KUVALAYĀNANDA** (*J. G. Gune*)

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January, 1926] KAIVALYADHĀMA [**January, 1926**

Post—LONAVLA

(Bombay, India)

The Kaivalyadhama

Note—Throughout the literature issued by the Ās'rama, the word 'Philosophy' is used in its widest sense. The proposed experimentation of spiritual experiences refers to the investigation of psychic phenomena according to the methods of Psycho-physiology.]

The Principal Ideal

The western philosophy, ever since the days of Greek thinkers, has continued to be merely speculative; and though of late it is exhibiting a biological tendency, it has neglected 'man' the highest biological product so far as his noblest spiritual experiences go. The western sciences, in their triumphant march, are ever singing songs to materialism, and have little leisure to attend to spiritualism and its wonders. Thus the western thought, either philosophical or scientific, does not experimentally take account of the sublimest in man.

The Indian philosophy, though based on the spiritual experiences of man, has been throughout its course, subjective. Swāmī Vivekānanda and others, indeed, tried to explain some of its principles in the light of modern sciences. But as they never took to experimentation, it again remained exclusively subjective and they could not add the objective side to it.

The Kaivalyadhāma proposes:

(i) To carry the biological tendency of the western philosophy to its logical conclusion by tackling scientifically the highest states of human experience.

(ii) To make the western laboratory methods of research reveal spiritual wonders.

(iii) To develop the objective character of the Indian philosophy by subjecting the individual spiritual experiences of man to experimentation.

Thus the Kaivalyadhāma has for its principal ideal the co-ordination of the western and eastern thought; and hopes, by their assimilation, to work out a philosophy which will perhaps give satisfaction to the greater part of humanity.

The Yogins, right from Patan'jali, the greatest exponent of Yogic science, knew how to induce the highest spiritual stages. As the objective sciences had not developed till late, it was not possible for these stages to be experimented upon; and though lately there has been a startling advance in modern sciences, their exclusive material tendency and the equally exclusive spiritual tendency of the Yogins have led to a complete but an unlucky divorce of the two schools of thought. The Kaivalyadhāma is anxious to wed these together and produce results which will lead to the realisation of the ideal indicated above.

The Subordinate Ideals

Although Yoga is mainly spiritual, it has two important minor aspects. It teaches excellent systems of physical culture and therapeutics. The Ās'rama has already started research in these two fields and reached impor-

(Continued on cover page 3.)

तदेकोऽवशिष्टः शिवः केवलोऽहम् ।
I alone persist : Blissful, Absolute.

ॐ

सोऽहम् ।

1569

Yoga-Mīmāṁsā

EDITED BY

SRĪMAT KUVALAYĀNANDA

(J. G. Gune)

January, 1926

Vol. 2 No. 1

KAIVALYADHĀMA
Post-Lonavla
(Bombay, India)

सर्वं खल्विदं ब्रह्म ।
All this is, indeed, Brahman.

नेह नानास्ति किञ्चन ।
There is nothing here apart from it.

शरीरमाद्यं खलु धर्मसाधनम् ।
Surely Health is the primary requisite of spiritual life.

Printed by S. T. Ajgaonkar, B. A., at Manoranjan Press, 3, Sandhurst Road, Bombay 4,
& published by Kuvalayānanda (J. G. Gune), at Kun'javana (904 Valvana), Lonavla.

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ॐ

तदेकोऽवशिष्टः शिवः केवलोऽहम् ।

सोऽहम् ।

YOGA-MĪMĀṄSĀ

VOL. II JANUARY, 1926 NO. 1

Editorial Notes

MAY the Maker of all make this journal a success. Blessed is the name of the Lord. May He bless the workers of the Ās'rama with a happy and prosperous career as servants of the world which is only the Lord Himself objectified. May He, that has created us in His infinite wisdom, lead us to the light that is beyond all darkness

* * *

WITH this issue begins the second year of our journal. In sending out this number we are filled with a sense of responsibility, therefore, as we hereby undertake to run the journal for the year 1926. We do wish and hope to have a long and prosperous career for the journal: but this wish is quite a different thing from actual commitment. And it is this commitment to our subscribers that weighs with us to-day. By the grace of the Lord, however, we feel quite confident that we shall be able to serve our readers, at least as faithfully as we did last year. But we have to crave indulgence of our subscribers for the many short-comings they may discover in our work. We are trying our best to do all that lies within our power to make the journal both instructive and interesting. But in spite of our serious efforts we may fall short of the expectations of our readers and hence the request for indulgence.

* * *

THE one thing that was most painful to us throughout the last year was the belated appearance of nearly every issue. We could publish the fourth number only as late as the end of December. This extreme delay in the publication of the last number, consequently, affected the issue of this number too. Yet we have managed to bring out this issue in a month and a half; and feel confident that the second number of this year will appear by the end of April. As regards the subsequent issues, they will, we hope, surely be out before the months fixed for their publication expire.

* * *

HAVING thus far brought under control the publication of our journal, we approach our subscribers with the following request. If they fail to get their copy of the Yoga-Mīmāṅsā in time, they should write to us in ten days after the month of issue runs out. A number of copies are lost in transit. This we can verify from the postal certificates we preserve and the complaints we receive from our subscribers. We are going to lodge a complaint with the Post Master General of our presidency. But we are afraid he too will not be able to mend matters. It is desirable, therefore, from the business point of view that we should receive complaints of non-receipt within a reasonable time, so that our office may know the exact situation. We are sure our readers will be prompt in reporting to us the non-receipt of their copies.

* * *

WE have to thank very heartily those of our subscribers who have sent their subscriptions for the second Volume in advance. Our thanks are also due to those who have sent us instructions asking us to send their copies per V.P.P. A very small number of our readers have upto now communicated their desire to cease to be subscribers. We record our sense of gratitude for the patronage these gentlemen gave us in the very first year of our career when it was most needed. Many of these people have wished us good luck in our enterprise, though they have expressed their inability to continue as subscribers. We very much appreciate the interest these persons take in our work; and thank them for their blessing. We have faith in the efficacy of good wishes; and in the heart of hearts we feel convinced that it is the sincere sympathy of the lovers of Yoga that will ultimately make our mission successful.

* * *

IN spite of our earnest request to our readers first sent through the fourth number of the last volume and afterwards through a printed card, many of our subscribers have not yet favoured us with definite instructions regarding their intention either to continue or to discontinue their patronage. We are sincerely sorry for this silence on their part Many of these gentlemen will honour our V.P.P., no doubt; but some of them are sure to reject it. We keenly feel for this situation, not because it entails an unnecessary loss of money, but because, in our view, it is insulting to the editor and publishers of a journal to meet with such a rebuff. We take advantage of this opportunity to make it clear to our readers that we do not wish to force ourselves upon anybody. Seekers of sympathy as we are, we always wish to be treated as gentlemen.

* * *

A word about the increase in the subscription rates of the foreign countries would be opportune here. We have raised our foreign subscription from S. 12 to S. 15, and have notified the American subscription rates in Dollars. Those who have watched the fluctuations in the exchange market during the last year, will readily excuse us for this change. We never wish to make large profits out of our journal, but we do wish to see that it pays its way and is no burden upon the Ās'rama.

* * *

WE have great pleasure in expressing our sense of obligation to our friend Mr. N. B Parulekar of Poona. He is a double graduate of the University of Bombay, having taken his M.A. in philosophy some two years back. At present Mr. Parulekar is in America reading at New York for his Doctorate. He is showing active sympathy for the work of the Ās'rama, and has succeeded in getting a number of American gentlemen interested in the literature of the Kaivalyadhāma. We have appointed him our representative in America, and shall be glad to receive students and enquiries through him.

* * *

WE beg to include the following few points in the editorial notes We know that it is more in the capacity of the Director of the Ās'rama that we are writing what follows. But as we combine the two capacities, the editorship and the directorship, in us, and as we wish to lay special emphasis on the following points we thought it desirable to give them this prominent place.

The circulation of our journal throughout the length and breadth of India and the therapeutical work that is being developed in the Ās'rama, induce quite a large number of consultations for health by correspondence. Letters pour in from all parts of India. This is, indeed, somewhat gratifying to us. But in fact it is more painful than gratifying, because we are invariably required to disappoint our inquirers. Not that we are unwilling to give advice. Nay, we are all anxious to be of service to the ailing humanity. But the patients that seek advice by correspondence are generally so far advanced in their diseases that they are almost on the verge of ruin. Under such circumstances we take it to be absolutely dangerous for us to give our advice by correspondence and for the patients to follow it from letters. No conscientious man can undertake to treat advanced cases full of complications, without personally examining the patients. Such being the facts, we have to request our prospective inquirers not to waste their time and money in writing tediously lengthy letters to us, unless there is a chance of the patient presenting himself in the Ās'rama for examination, if required to do so.

* * *

EVEN people who stay in places that are situated within two or three hundred miles of Lonavla, will do well to remember the truth enunciated in the preceding note, namely, no therapeutical advice can be given in complicated cases without a personal examination of the patient. There is yet another point which we would like to bring to the notice of our reading public. Very often patients look to be under the impression that we would be in a position to suggest such an easy treatment even in advanced cases that a single pose or some other simple exercise would put an end to the whole trouble! This is absurd! Yogic treatment is bound to be elaborate wherever complications exist. People approach us, as a general rule, after trying every other system without success; and we expect that in every such case the treatment cannot but be laborious. So we have to request the intending patients to note that they should think of our treatment, only if they are prepared to get themselves personally examined by us, and have the will and the intention to carry out the elaborate treatment that would be subsequently suggested.

* * *

THERE is yet another point which our patients will do well to remember. Our treatment consists of different Yogic practices which require some days to learn. The period of training may vary from one day to some months, according to the needs of the case, and the physical and intellectual capacity of the patient. So people have to stay in Lonavla, either inside the Ās'rama or outside it, for some days at least, in order to pick up the necessary practices.

* * *

WHAT we have said upto now refers to advanced and complicated cases. There is, however, quite a large section of people coming to consult us on some minor ailment. These too will do well to remember that it always takes a day or two at least to be initiated into the practices necessary for their treatment.

A third section of people is of Yogic physical culturists. Young men from schools and colleges come to the Ās'rama with the hope that they can master a set of exercises within some hours! This is absurd, especially in the case of persons who have not the advantage of previous Yogic training or even training in general gymnastics. Breathing exercises are an essential factor of every prescription, whether it is intended for a patient or a physical culturist. And it always takes a day or two to learn correctly even the most elementary practices in breathing. Under these circumstances we have to request our young people to come to the Ās'rama with some leisure, so that they may not meet with disappointment.

* * *

THERE is yet another class of people who come to us for consultation. We mean the spiritual culturists. To them also we have to say the same thing. If they come to the Ās'rama to learn something new, they must come with some spare time at their disposal

* * *

PERSONS staying in places very near Lonavla are in a position to repeat their visits and need not necessarily stay in the Ās'rama for their work.

* * *

WE get a number of casual visitors. They are attracted either by curiosity, or by genuine interest in Yoga and in the working of our Ās'rama. We have to request these people to be business-like and precise in their inquiries.

* * *

IN conclusion we approach the general public with the request that they should co-operate with us and patronise us in whatever we undertake not only as the editor of this journal but also as the Director of the Kaivalyadhāma.

* * *

FOLLOWING these notes our readers will find a few points sent us by the Manager of the Ās'rama for publication. It is hoped that they will meet with careful attention.

PLEASE NOTE

The Manager of the Ās'rama has sent us the following for publication :—

1 It is desirable for every gentleman that comes to stay in the Ās'rama even for a day to have his own bedding.

2 Being a hill station Lonavla is generally cool throughout the year. It is desirable, therefore, for every one coming to the Ā'srama to have sufficient warm clothing with him.

3 To avoid inconvenience to himself and to the management of the Ās'rama it is desirable that an intending guest should send beforehand precise information regarding the time of his arrival and the probable period of his stay. If any special arrangements of food, etc. are necessary the fact should be clearly intimated.

4 The Ās'rama is strictly for vegetarianism. No non-vegetarian food or tonic would be allowed within the precincts of the institution.

5 Tea and smoke are entirely prohibited within the limits of the Ās'rama.

6 It is desirable that every gentleman coming to the Ās'rama should, as far as possible, conform to the discipline of this place. No unholy act or word should disturb the peace of the Ās'rama.

7 Boarding and lodging are given free of charge, for the first two days to every one coming to the Ās'rama. Should any one overstay this period, he is charged a Rupee and a half per day for his actual expenses.

8 The concession for the first two days is general. Should a gentleman, however, wish to pay even for these days, the money will be thankfully accepted.

9 The Ās'rama is being conducted with a religious sentiment. The management is, therefore, always anxious

not to be mercenary. Gentlemen coming to the Ās'rama are requested to appreciate this attitude and not to introduce any unpleasant monetary discussions in their dealings with the authorities.

10 The Ās'rama stands for Yoga and Yoga alone. It is hoped, therefore, that the facilities given here will not be used for any other purpose by looking upon the institution either as a general sanitorium or health home.

11 No fees are charged for Yogic instruction.

12 All treatment and consultation is free of charge.

N. B. Those of our readers that claim no acquaintance with anatomy and physiology will do well to read the Semi-Scientific Section first.

The Scientific Section

SYSTEM OF TRANSLITERATION

Letters, their sounds, and a description of these sounds:—

अ	A	Pronounce	'A'	like	'u'	in	'but'.
आ	Ā	„	'Ā'	„	'a'	„	'far'.
इ	İ	„	'İ'	„	'i'	„	'pin'.
ई	Ī	„	'Ī'	„	'ee'	„	'feel'.
उ	U	„	'U'	„	'u'	„	'fulsome'.
ऊ	Ū	„	'Ū'	„	'oo'	„	'wool'.
ऋ	Ṛi	„	'Ṛi'	„	'rö'	„	German.
ॠ	Ṝi	„	'Ṝi'	„	„	„	„ with a strong accent.
ऌ	Ḷi	„	'Ḷi'	„	'lö'	„	German.
ए	E	„	'E'	„	'a'	„	'fate'.
ऐ	AĪ	„	'AĪ'	„	'ai'	„	'aisle' but not drawled out.
ओ	O	„	'O'	„	'o'	„	'over'.
औ	AU	„	'AU'	„	'ou'	„	'ounce' but not drawled out.
क	KA	„	'K'	„	'k'	„	'kill'.
ख	KHA	„	'KH'	„	'kh'	„	'ink-horn' or like 'ch' in 'Loch' (Scottish).
ग	GA	„	'G'	„	'g'	„	'girl'.
घ	GHA	„	'GH'	„	'gh'	„	'log-house' or 'ghee'.
ङ	N̄A	„	'N̄'	„	'n'	„	'king' or 'link'.
च	CHA	„	'CH'	„	'ch'	„	'church'.
छ	CHHA	„	'CHH'	„	the second 'ch'	in	'churchill'.
ज	JA	„	'J'	„	'j'	in	'join'.
झ	JHA	„	'JH'	„	palatal 'z'	as in	'azure'.
ञ	N'A	„	'N''	„	'n'	in	'pinch'.
ट	ṬA	„	'Ṭ'	„	't'	in	'tub'.
ठ	ṬHA	„	'ṬH'	„	'th'	„	'pot-house'.

SYSTEM OF TRANSLITERATION

Letters, their sounds, and a description of these sounds :—

ड	ḌA	Pronounce	‘Ḍ’	like	‘d’	in	‘dog’.
ढ	ḌHA	„	‘ḌH’	„	‘dh’	„	‘mad-house’.
ण	ṆA	„	‘Ṇ’	„	‘n’	„	‘splinter’ or ‘and’.
त	TA	„	‘T’	like dental ‘t’ as in ‘thin’, or like the French ‘T’.			
थ	THA	„	‘TH’	„	‘th’	in	‘thunder’.
द	DA	„	‘D’	„	‘th’	„	‘then’.
ध	DHA	„	‘DH’	„	‘th’	„	‘this’.
न	NA	„	‘N’	„	‘n’	„	‘no’.
प	PA	„	‘P’	„	‘p’	„	‘paw’.
फ	PHA	„	‘PH’	„	‘ph’	„	‘top-heavy’, or ‘gh’ in ‘laugh’.
ब	BA	„	‘B’	„	‘b’	„	‘balm’.
भ	BHA	„	‘BH’	„	‘bh’	„	‘hob-house’.
म	MA	„	‘M’	„	‘m’	„	‘mat’.
य	YA	„	‘Y’	„	‘y’	„	‘yawn’.
र	RA	„	‘R’	„	‘r’	„	‘rub’.
ल	LA	„	‘L’	„	‘l’	„	‘lo’.
व	VA	„	‘V’	„	‘w’	„	‘wane’.
श	S’A	„	‘S’’	„	‘sh’	„	‘ashes’
ष	SHA	„	‘SH’	„	a strong lingual with rounded lips.		
स	SA	„	‘S’	„	‘s’	in	‘sun’.
ह	HA	„	‘H’	„	‘h’	„	‘hum’.
ळ	ḶA	A dento-lingual pronounced with a little rounding of lips.					

Visarga—Ḥ; Nasalized म् as in संयम—ṁ;

Nasalized न् as in मीमांसा—ṅ.

BLOOD PRESSURE EXPERIMENTS

on

SARVĀṄGĀSANA AND MATSYĀSANA

WE are quite aware of the scepticism of authorities like Sir James Mackenzie* regarding the soundness of conclusions based on blood pressure records. We understand, however, that this scepticism refers only to those conclusions that bear upon the diagnosis or prognosis of heart affections and their treatment. It may have reference also to determining averages for the different ages of man ; but in all probability, it has nothing to say against those experiments in blood pressure that are undertaken to study the effects of the different physical exercises on the circulatory system.

In fact standard medical journals, such as American Journal of Physiology, British Medical Journal and Edinburgh Medical Journal, have been publishing articles in this connection for the last two decades or more; and we feel we are fully justified in publishing in our journal our researches in the field of blood pressure as affected by the Yogic exercises.

In this section we are recording the results of our experiments in blood pressure during the two poses of Sarvāṅgāsana and Matsyāsana, (Figs. I to III). Eleven subjects were examined for both the Āsanas. They were young adults of average health. Their age, height and weight are given on P. 14. This table along with the others recording the different normals, will show that we had quite a variety of subjects. Experiments were tried morning and evening. As the cold mornings affected the normal blood pressure, we thought it desirable to quote the normal immediately before each experiment. Normals have been recorded in sitting. With a view to get an approximately correct view of the subjects' heart action and arterial resistance, we have recorded their blood pressure in standing and lying down for a few minutes. Figures for pulse pressure have not been given as they can be easily found from the systolic and diastolic pressures.

---

* Principles of Diagnosis and Treatment in Heart Affections ; 1924.

Our observations were made with the help of the Barton Sphygmomanometer. We used the auscultation method by listening with a binaural stethoscope at the bend of the elbow over the artery. Figures given throughout the following tables represent mm. Hg.

Occasionally our readings were vitiated by a chance muscular contraction or a passing mental excitement. But these occasions were very few and the record fairly represents results of a quiet mind and body practising the Yogic poses. In the case of Sarvāṅgāsana (Fig II), the contraction of biceps and other muscles of the arm was so complete in some subjects that no pulse could be heard. Hence we have recorded only such cases as allowed examination by the auscultation method.

We do not give to-day our conclusions based on these records. We shall make a statement of these in the next issue. In the mean time, we have to request those of the medical men who happen to read these pages, to make a careful study of these and form their own conclusions, so that they may be in a position to appreciate and criticise what we say in our next number.

Diagrammatical representations of the rise and fall in blood pressure have been given at the end of this section.

SUBJECTS, THEIR AGE, HEIGHT & WEIGHT.

Subjects	Age in Years	Height in Inches	Weight in Pounds
A	23	66	121
B	22	65·5	118
C	21	63·5	111
D	24	61·5	110
E	20	62	103
F	23	62	116
G	23	61	113
H	23	64·5	110
I	25	65·5	123
J	21	59	120
K	19	65·5	103

BLOOD PRESSURE IN SITTING

Subjects	Normal Blood Pressure in Sitting	
	S.	D.
A	130 mm. Hg.	94 mm. Hg.
B	124 ,,	88 ,,
C	140 ,,	90 ,,
D	134 ,,	106 ,,
E	100 ,,	80 ,,
F	116 ,,	80 ,,
G	136 ,,	86 ,,
H	114 ,,	74 ,,
I	110 ,,	80 ,,
J	118 ,,	82 ,,
K	124 ,,	76 ,,

BLOOD PRESSURE

Subjects	Initial	
	S.	D.
A	130 mm. Hg.	102 mm. Hg.
B	120 ,,	78 ,,
C	132 ,,	90 ,,
D	130 ,,	100 ,,
E	95 ,,	75 ,,
F	122 ,,	90 ,,
G	145 ,,	98 ,,
H	110 ,,	84 ,,
I	110 ,,	76 ,,
J	102 ,,	75 ,,
K	118 ,,	90 ,,

IN STANDING

End of 1st m.		End of 2nd m.	
S.	D.	S.	D.
132 mm. Hg.	102 mm. Hg.	130 mm. Hg.	82 mm. Hg
118 „	76 „	114 „	76 „
130 „	90 „	120 „	84 „
130 „	101 „	132 „	102 „
90 „	74 „	94 „	76 „
116 „	88 „	114 „	84 „
142 „	90 „	138 „	94 „
106 „	82 „	106 „	74 „
110 „	78 „	106 „	80 „
100 „	75 „	94 „	80 „
110 „	78 „	110 „	78 „

BLOOD PRESSURE

Subjects	End of 3rd m.	
	S.	D.
A	134 mm. Hg.	92 mm. Hg.
B	110 ,,	84 ,,
C	115 ,,	84 ,,
D	132 ,,	104 ,,
E	90 ,,	68 ,,
F	114 ,,	82 ,,
G	133 ,,	95 ,,
H	102 ,,	80 ,,
I	106 ,,	82 ,,
J	94 ,,	76 ,,
K	106 ,,	80 ,,

IN STANDING

End of 4th m.		
S.	D.	
134 mm. Hg.	98 mm. Hg.	
108 "	85 "	
......	......	
136 "	104 "	
96 "	76 "	
106 "	80 "	
134 "	95 "	
102 "	76 "	
105 "	76 "	
94 "	80 "	
110 "	80 "	

BLOOD PRESSURE IN LYING DOWN

Subjects	Initial.	
	S.	D.
A	132 mm. Hg.	96 mm. Hg.
B	110 „	78 „
C	132 „	90 „
D	134 „	98 „
E	100 „	70 „
F	110 „	78 „
G	135 „	90 „
H	105 „	65 „
I	108 „	72 „
J	100 „	65 „
K	110 „	58 „

BLOOD PRESSURE IN LYING DOWN

End of 1st m.		End of 2nd m.	
S.	D.	S.	D.
130 mm. Hg.	96 mm Hg.	130 mm. Hg	94 mm. Hg.
110 ,,	90 ,,	110 ,,	90 ,,
128 ,,	88 ,,	128 ,,	88 ,,
132 ,,	100 ,,	130 ,,	100 ,,
100 ,,	68 ,,	98 ,,	66 ,,
110 ,,	74 ,,	108 ,,	72 ,,
124 ,,	86 ,,	124 ,,	88 ,,
100 ,,	64 ,,	98 ,,	66 ,,
107 ,,	70 ,,	102 ,,	66 ,,
98 ,,	66 ,,	98 ,,	66 ,,
104 ,,	[illegible] ,,	98 ,,	60 ,,

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BLOOD PRESSURE IN LYING DOWN

Subjects	End of 3rd m.	
	S.	D.
A	130 mm. Hg	98 mm. Hg.
B	110 „	84 „
C	126 „	88 „
D	130 „	98 „
E	98 „	70 „
F	108 „	76 „
G	124 „	90 „
H	97 „	64 „
I	100 „	70 „
J	98 „	64 „
K	98 „	60 „

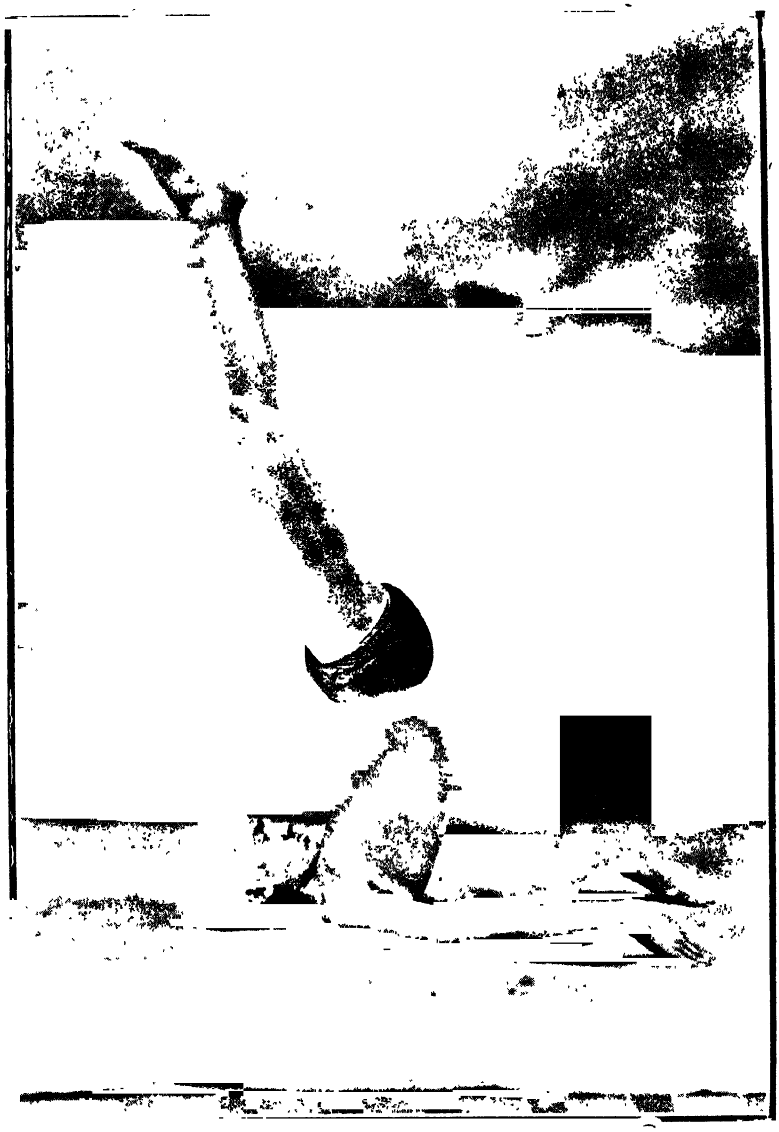
BLOOD PRESSURE IN LYING DOWN

End of 4th m.		
S.	D.	
130 mm. Hg.	94 mm. Hg.	
114 „	90 „	
126 „	90 „	
129 „	100 „	
96 „	64 „	
108 „	76 „	
120 „	84 „	
95 „	65 „	
100 „	70 „	
98 „	64 „	
98 „	60 „	

BLOOD PRESSURE IN SARVĀṄGĀSANA
(With Hands Extended.)

Subjects	Normal in Sitting	
	S.	D.
A	145 mm. Hg.	108 mm. Hg.
B	116 ,,	88 ,,
C	144 ,,	108 ,,
D	120 ,,	96 ,,
E	120 ,,	85 ,,
F	124 ,,	96 ,,
G	144 ,,	105 ,,
H	128 ,,	102 ,,
I	126 ,,	95 ,,
J	114 ,,	90 ,,
K	128 ,,	100 ,,

Fig. I



Sarvāngāsana or the Pan-Physical Pose
with
Hands Extended.
(Side View)

BLOOD PRESSURE IN SARVĀṄGĀSANA

(With Hands Extended)

Subjects	Initial	
	S.	D.
A	145 mm. Hg.	120 mm. Hg.
B	145 ,,	136 ,,
C	144 ,,	132 ,,
D	148 ,,	132 ,,
E	122 ,,	96 ,,
F	122 ,,	96 ,,
G	164 ,,	134 ,,
H	140 ,,	120 ,,
I	142 ,,	118 ,,
J	124 ,,	105 ,,
K	140 ,,	120 ,

BLOOD PRESSURE IN SARVĀṄGĀSANA
(With Hands Extended)

Subjects	End of 1st m.	
	S.	D.
A	154 mm. Hg.	130 mm. Hg.
B	145 ,,	136 ,,
C	150 ,,	120 ,,
D	148 ,,	130 ,,
E	125 ,,	108 ,,
F	118 ,,	98 ,,
G	162 ,,	134 ,,
H	140 ,,	124 ,,
I	142 ,,	124 ,,
J	124 ,,	105 ,,
K	140 ,,	126 ,,

BLOOD PRESSURE IN SARVĀṄGĀSANA
(With Hands Extended)

End of 2nd m.		End of 3rd m.	
S.	D.	S.	D.
154 mm. Hg.	132 mm Hg.	156 mm. Hg.	136 mm. Hg.
145 "	118 "	136 "	118 "
154 "	120 "	154 "	126 "
148 "	124 "	148 "	135 "
130 "	108 "	134 "	110 "
124 "	98 "	130 "	104 "
164 "	138 "	164 "	136 "
145 "	120 "	146 "	126 "
144 "	125 "	146 "	126 "
124 "	106 "	126 "	107 "
144 "	126 "	140 "	128 "

BLOOD PRESSURE IN SARVĀṄGĀSANA
(With Hands Extended)

Subjects	End of 4th m.	
	S.	D.
A	156 mm. Hg.	138 mm. Hg.
B	134 "	118 "
C	152 "	130 "
D	146 "	130 "
E	128 "	106 "
F	130 "	108 "
G	166 "	142 "
H	140 "	110 "
I	150 "	126 "
J	128 "	108 "
K	……	……

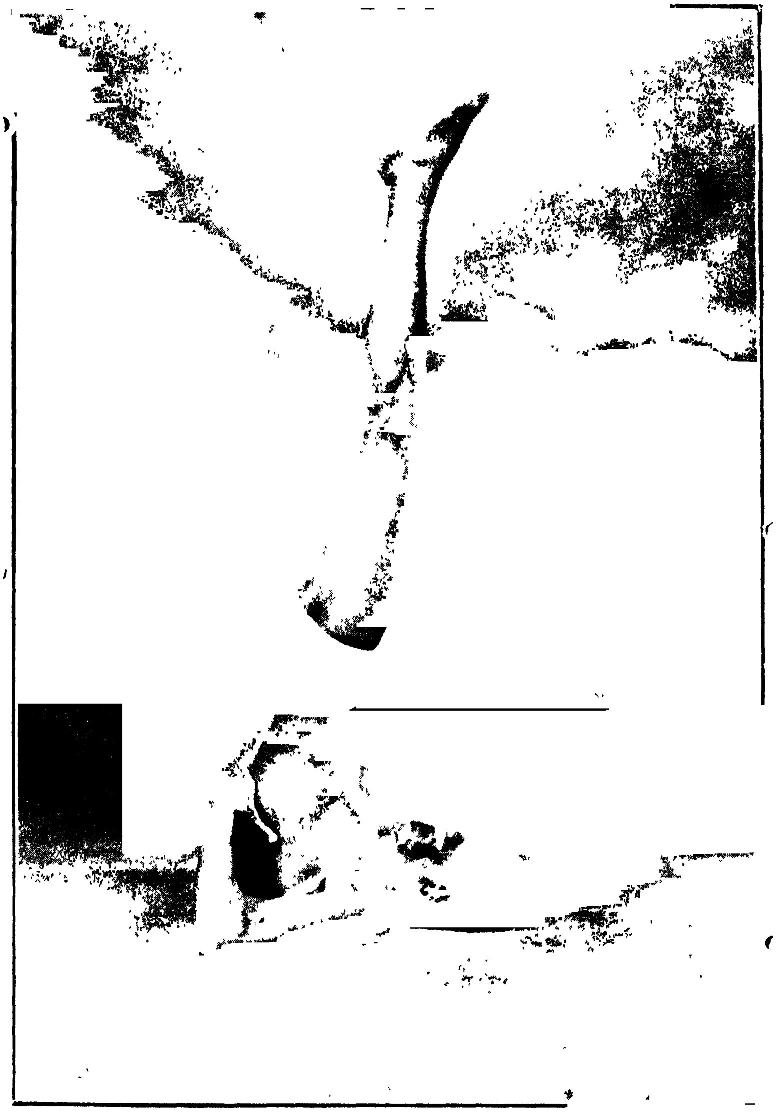
BLOOD PRESSURE IN SARVĀṄGĀSANA
(With Hands Extended)

End of 5th m.		After the Pose in Sitting.	
S.	D.	S.	D.
160 mm. Hg.	144 mm. Hg.	140 mm Hg.	112 mm. Hg.
132 „	120 „	130 „	105 „
156 „	130 „	142 „	122 „
148 „	132 „	128 „	105 „
121 „	104 „	110 „	96 „
130 „	108 „	118 „	90 „
164 „	144 „	148 „	112 „
138 „	124 „	110 „	98 „
152 „	126 „	128 „	96 „
128 „	110 „	118 „	94 „
……	……	122 „	96 „

BLOOD PRESSURE IN SARVĀṄGĀSANA

Subjects	Initial	
	S.	D.
A	172 mm. Hg.	140 mm. Hg.
B	163 „	138 „
C	No	Pulse
D	„	„
E	140 mm. Hg.	120 mm. Hg.
F	No	Pulse
G	„	„
H	„	„
I	„	„
J	124 mm. Hg.	100 mm. Hg.
K	134 „	114 „

Fig. II



Sarvāngāsana or the Pan-Physical Pose.
(Side View)

BLOOD PRESSURE IN SARVĀṄGĀSANA

Subjects	End of 1st m.	
	S.	D.
A	164 mm Hg.	136 mm. Hg.
B	160 „	145 „
C	No	Pulse
D	„	„
E	146 mm. Hg.	124 mm. Hg.
F	No	Pulse
G	„	„
H	„	„
I	„	„
J	118 mm. Hg.	90 mm. Hg.
K	132 „	108 „

BLOOD PRESSURE IN SARVĀṄGĀSANA

Subjects	End of 2nd m.	
	S.	D.
A	166 mm. Hg.	140 mm. Hg.
B	158 „	128 „
C	No	Pulse
D	„	„
E	147 mm. Hg	124 mm. Hg.
F	No	Pulse
G	„	„
H	„	„
I	„	„
J	116 mm. Hg.	94 mm. Hg.
K	130 „	106 „

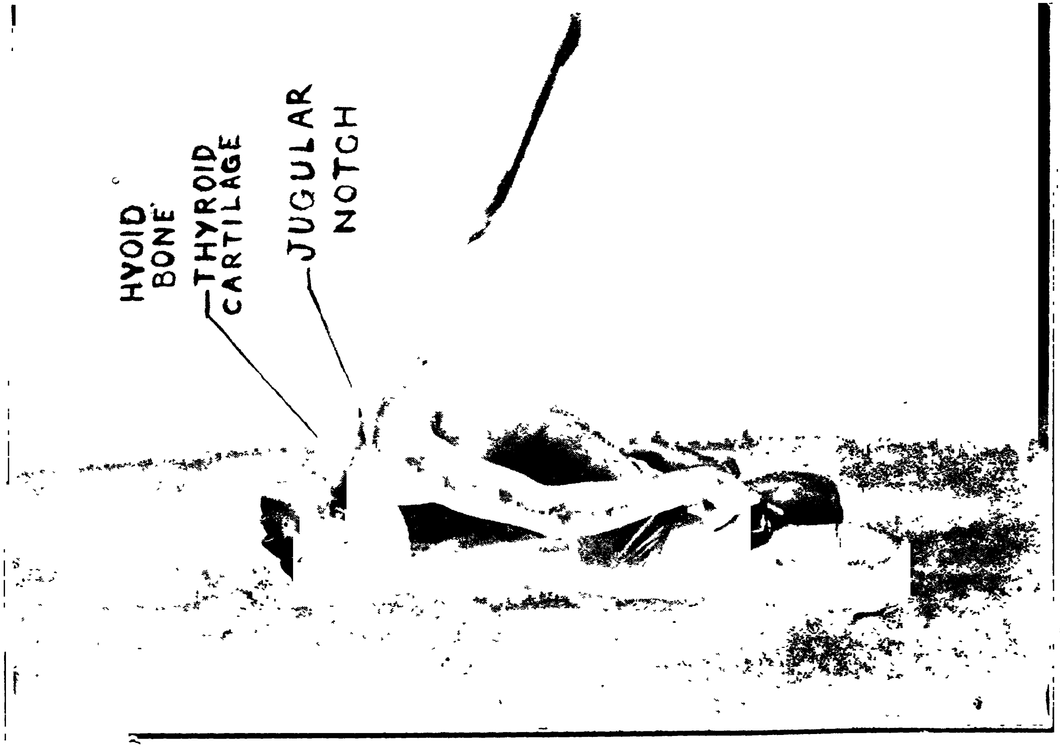
BLOOD PRESSURE IN SARVĀṄGĀSANA

End of 3rd m.		After the Pose in Sitting	
S.	D.	S.	D.
162 mm. Hg.	135 mm. Hg.	134 mm Hg.	88 mm. Hg.
160 „	130 „	130 „	98 „
No	Pulse	No	Pulse
„	„	„	„
148 mm. Hg.	126 mm. Hg.	118 mm. Hg.	90 mm. Hg.
No	Pulse	No	Pulse
„	„	„	„
„	„	„	„
„	„	„	„
124 mm. Hg.	98 mm. Hg.	116 mm. Hg.	86 mm. Hg.
136 „	110 „	120 „	88 „

BLOOD PRESSURE IN MATSYĀSANA

Subjects	Normal in sitting	
	S.	D.
A	134 mm. Hg.	108 mm. Hg.
B	146 „	134 „
C	142 „	110 „
D	130 „	100 „
E	118 „	88 „
F	142 „	98 „
G	136 „	96 „
H	124 „	94 „
I	130 „	100 „
J	126 „	98 „
K	118 „	98 „

Fig. III



Matsyāsana or The Fish pose.
(Side View)

BLOOD PRESSURE IN MATSYĀSANA

Subjects	Initial	
	S.	D.
A	144 mm. Hg.	120 mm. Hg.
B	158 ,,	134 ,,
C	146 ,,	110 ,,
D	144 ,,	104 ,,
E	118 ,,	88 ,,
F	150 ,,	110 ,,
G	164 ,,	114 ,,
H	122 ,,	92 ,,
I	134 ,,	104 ,,
J	134 ,,	110 ,,
K	124 ,,	98 ,,

BLOOD PRESSURE IN MATSYĀSANA

Subjects	End of 1st m.	
	S.	D.
A	150 mm. Hg.	120 mm. Hg.
B	158 „	132 „
C	148 „	110 „
D	142 „	102 „
E	116 „	92 „
F	144 „	108 „
G	152 „	116 „
H	122 „	100 „
I	132 „	105 „
J	128 „	106 „
K	122 „	102 „

BLOOD PRESSURE IN MATSYĀSANA

End of 2nd m.		End of 3rd m.	
S.	D.	S.	D.
150 mm. Hg.	122 mm Hg.	158 mm. Hg	130 mm. Hg.
156 „	130 „	154 „	130 „
142 „	110 „	140 „	110 „
142 „	100 „	144 „	104 „
116 „	102 „	115 „	100 „
146 „	110 „	144 „	112 „
150 „	118 „	152 „	120 „
124 „	102 „	120 „	100 „
134 „	106 „	134 „	106 „
128 „	106 „	132 „	106 „
124 „	100 „	124 „	100 „

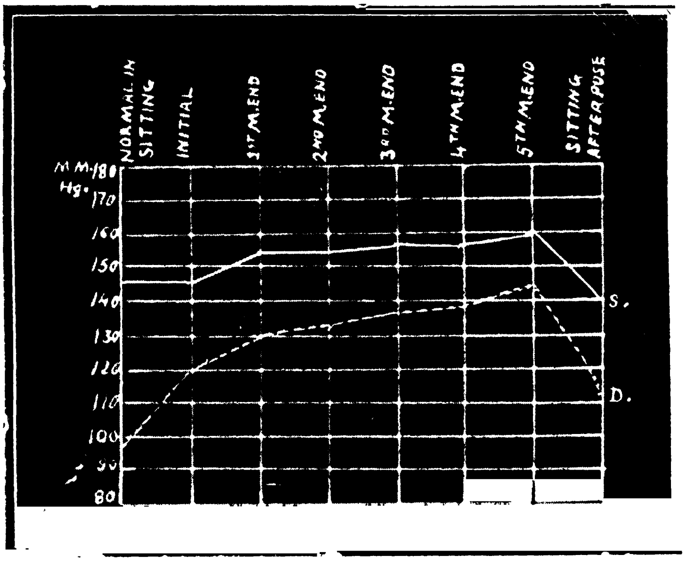
BLOOD PRESSURE IN MATSYĀSANA

Subjects	After the Pose in Sitting	
	S.	D.
A	143 mm. Hg.	116 mm. Hg.
B	140 ,,	120 ,,
C	130 ,,	110 ,,
D	124 ,,	104 ,,
E	108 ,,	80 ,,
F	134 ,,	110 ,,
G	140 ,,	112 ,,
H	122 ,,	98 ,,
I	124 ,,	110 ,,
J	122 ,,	106 ,,
K	122 ,,	100 ,,

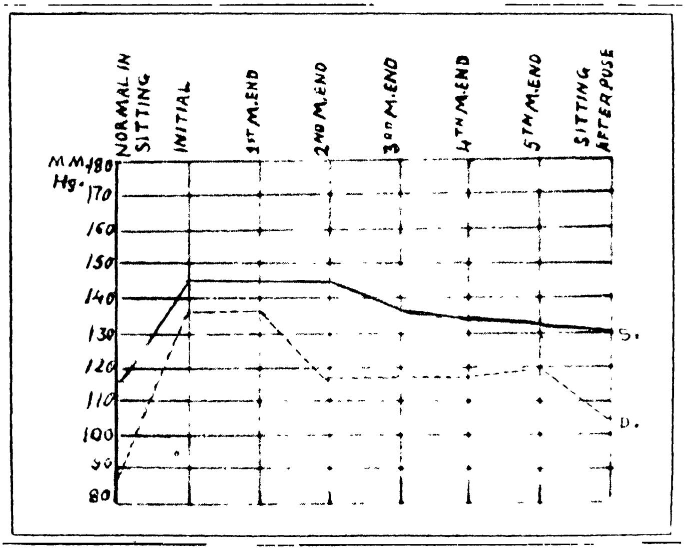
Blood Pressure in Sarvangasana

(With Hands Extended)

Subject—**A** Fig. **IV**



Subject—**B** Fig. **V**

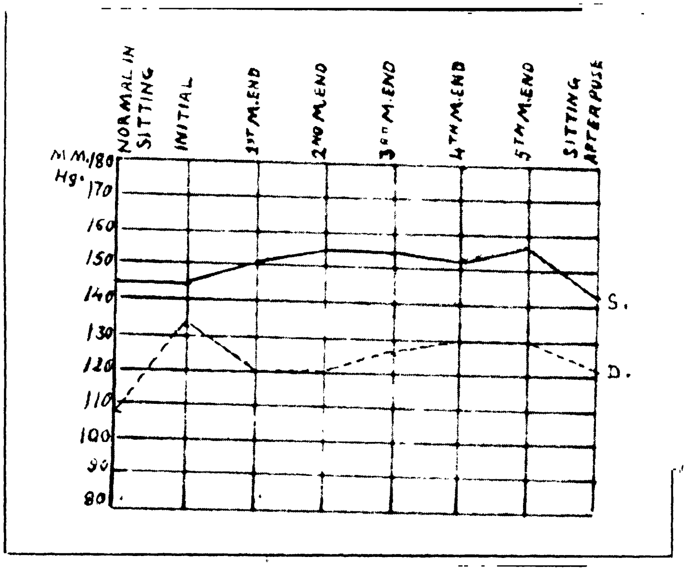


In these and the following diagrammatic representations Ordinates = mm. Hg.; Abscissa = time in minutes; S. = Systolic and D. = Diastolic.

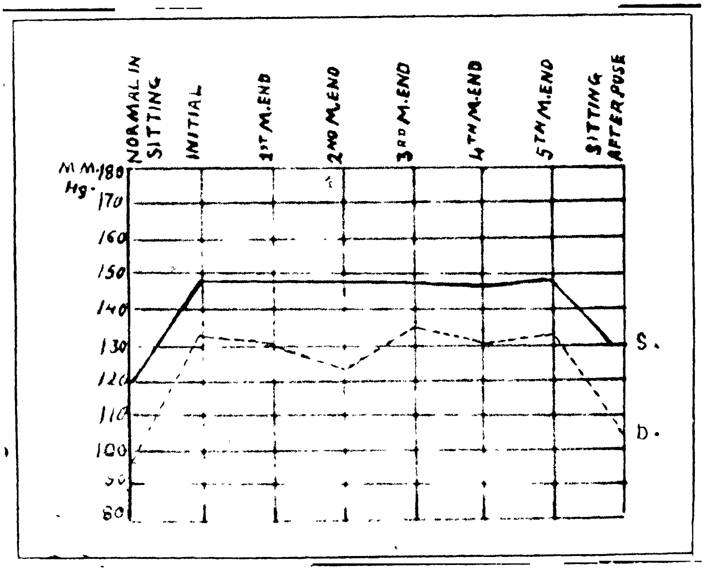
Blood Pressure in Sarvāngāsana

(With Hands Extended)

Subject—**C** Fig. **VI**



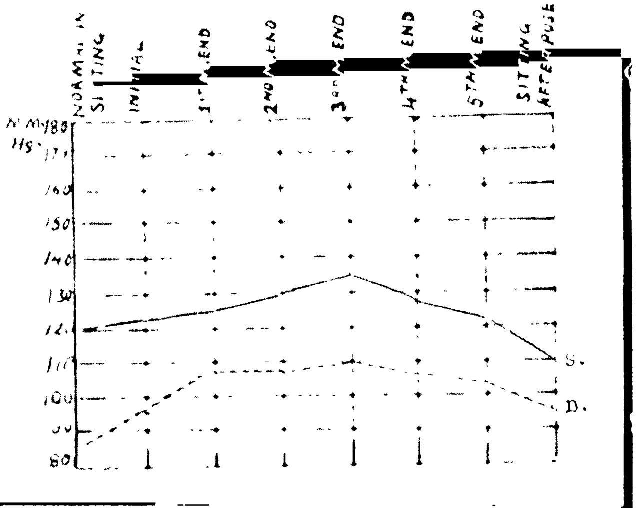
Subject—**D** Fig. **VII**



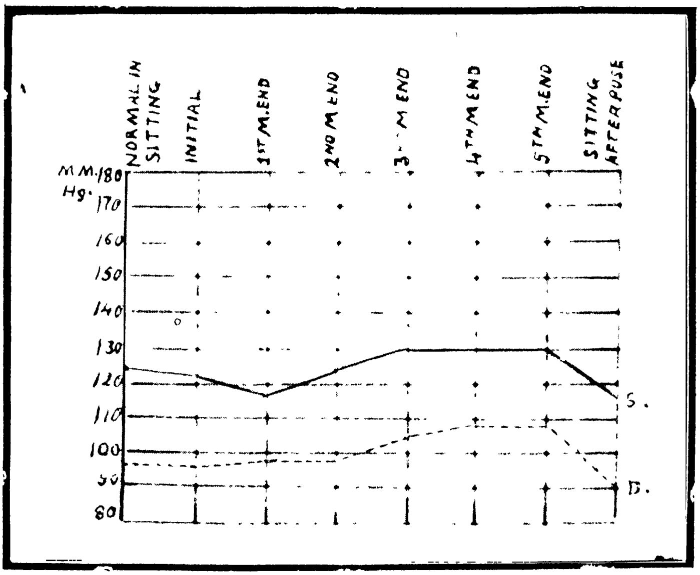
Blood Pressure in Sarvāṅgāsana

(With Hands Extended)

Subject—**E** Fig. **VIII**



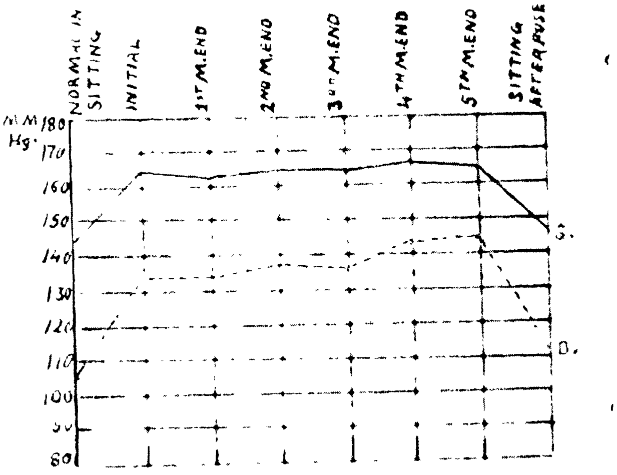
Subject—**F** Fig. **IX**



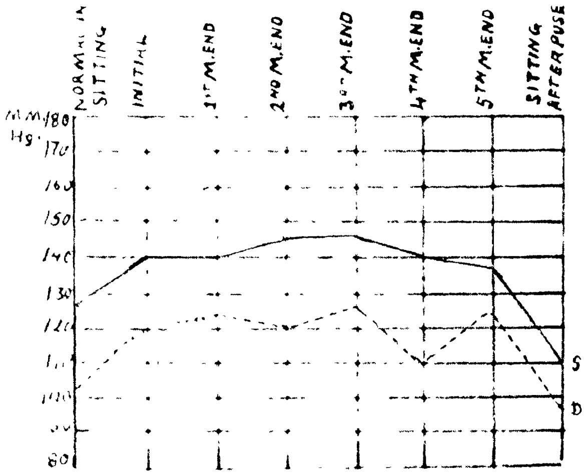
Blood Pressure in Sarvāngasana

(With Hands Extended)

Subject—**G** Fig. **X**

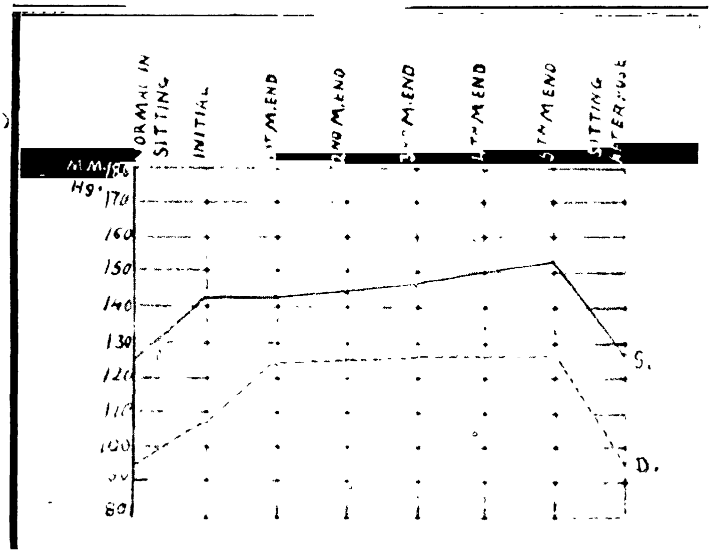


Subject—**H** Fig. **XI**

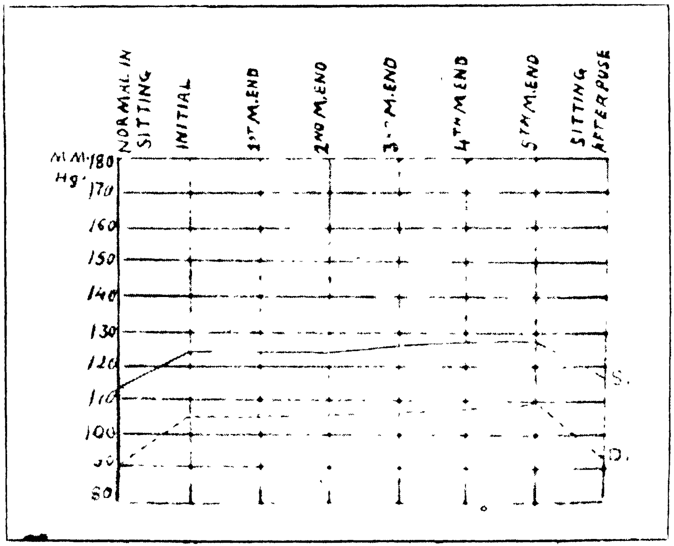


Blood Pressure in Sarvāngāsana
(With Hands Extended)

Subject—**I** Fig. **XII**



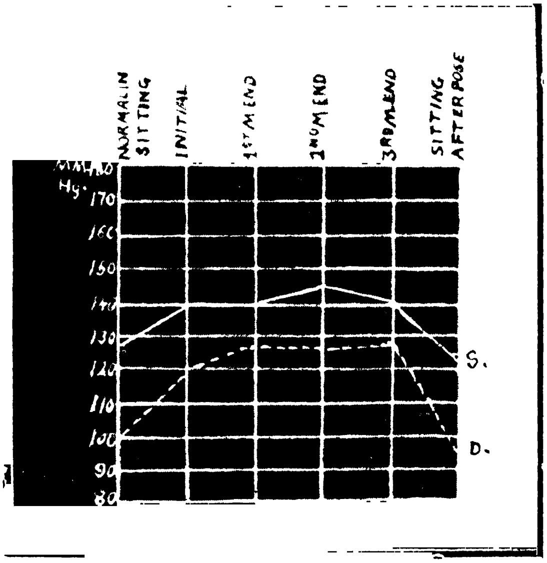
Subject—**J** Fig. **XIII**



Blood Pressure in Sarvāṅgāsana

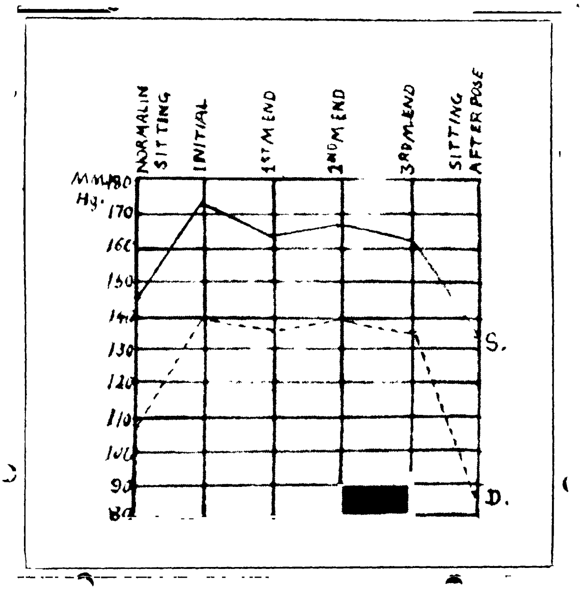
(With Hands Extended)

Subject—**K** Fig. **XIV**

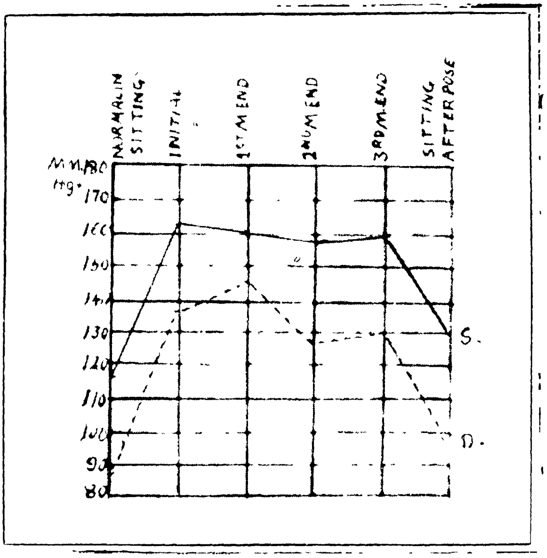


Blood Pressure in Sarvāngāsana

Subject—**A** Fig. **XV**

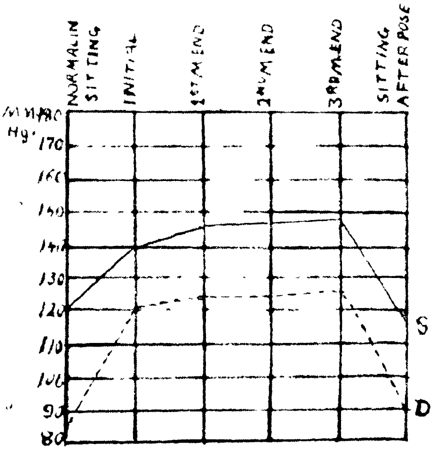


Subject—**B** Fig. **XVI**

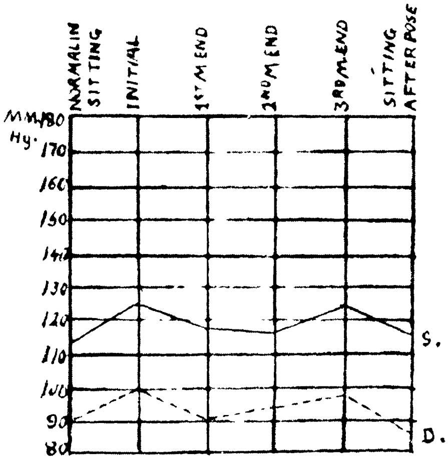


Blood Pressure in Sarvangasana

Subject—**E** Fig. **XVII**



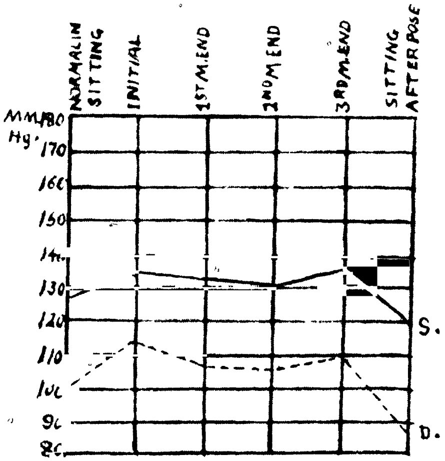
Subject—**J** Fig. **XVIII**



Blood Pressure in Sarvāṅgāsana

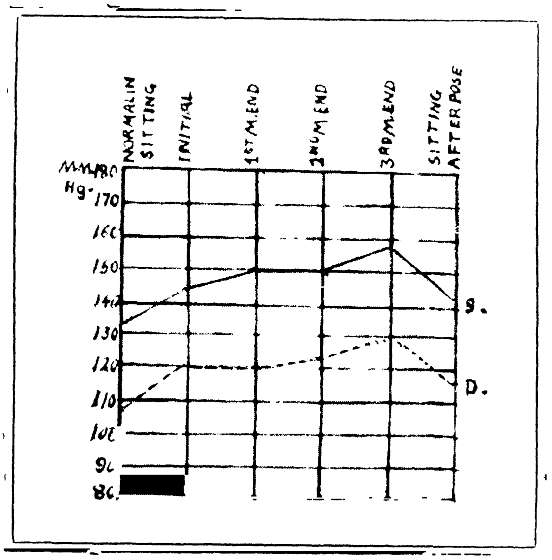
Subject—**K**

Fig. **XIX**

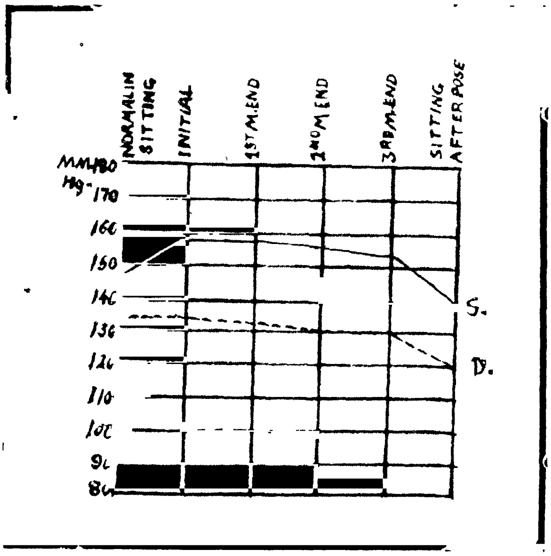


Blood Pressure in Matsyāsana.

Subject—**A** Fig. **XX**

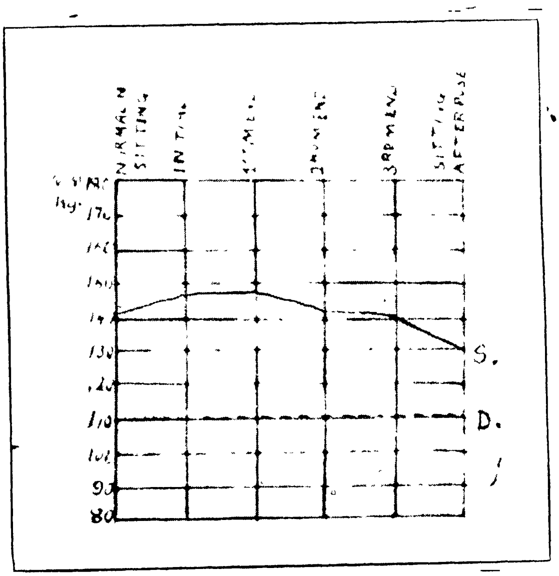


Subject—**B** Fig. **XXI**

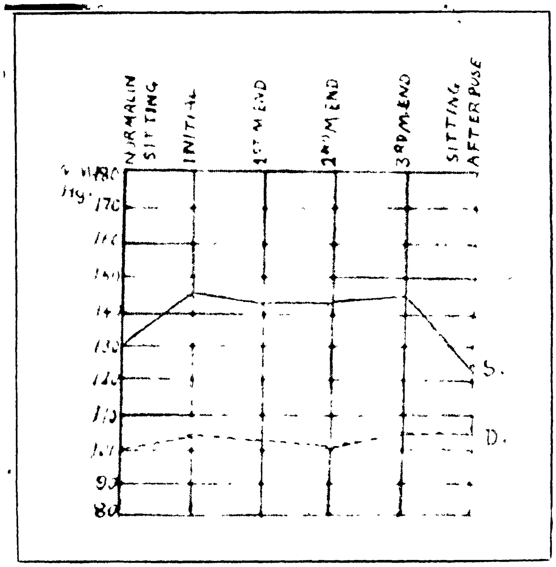


Blood Pressure in Matsyāsana.

Subject—**C** Fig. **XXII**

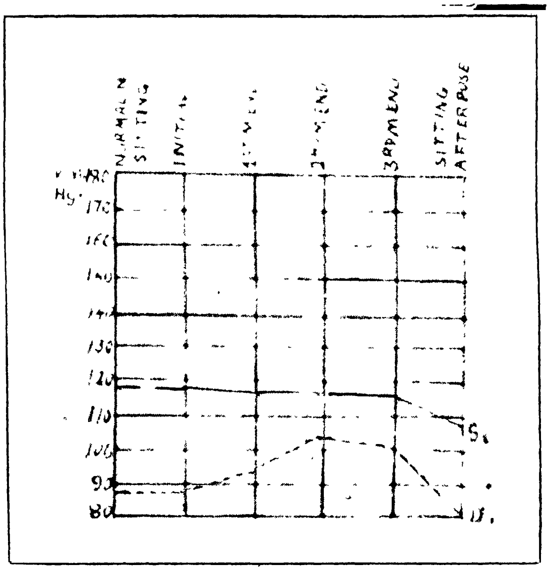


Subject—**D** Fig. **XXIII**

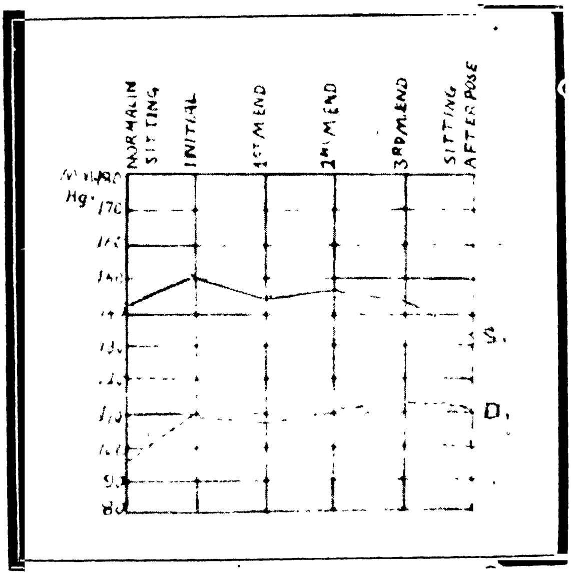


Blood Pressure in Matsyāsana.

Subject—**E** Fig. **XXIV**

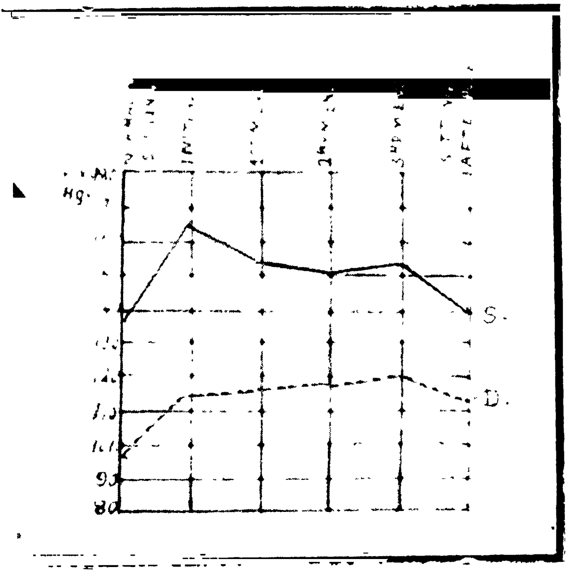


Subject—**F** Fig. **XXV**

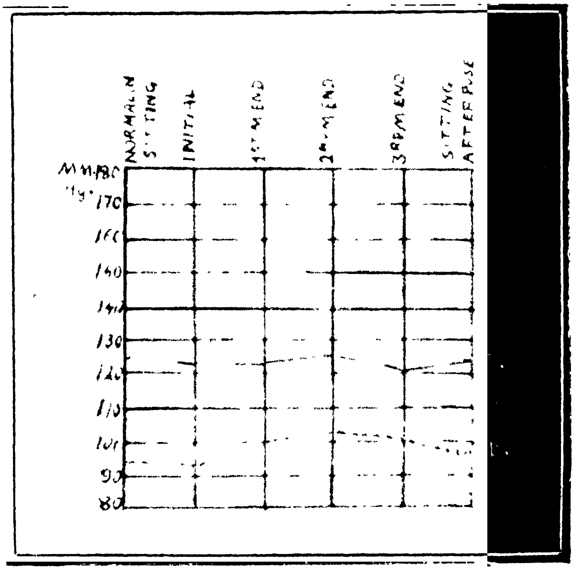


Blood Pressure in Matsyāsana

Subject—**G** Fig. **XXVI**

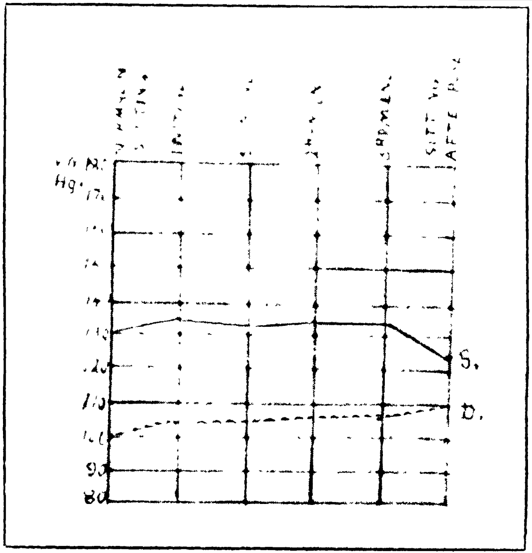


Subject—**H** Fig **XXVII**

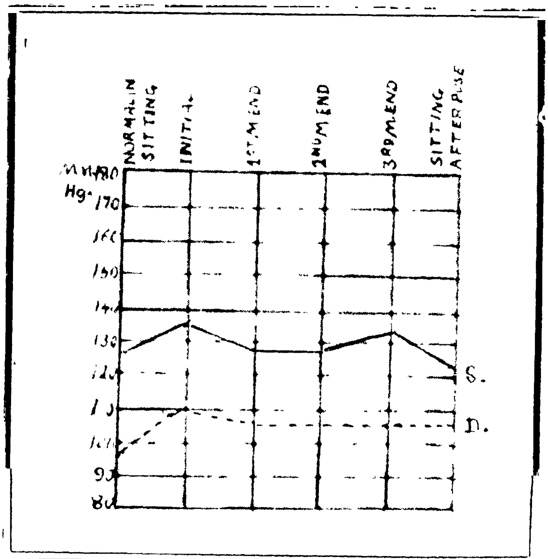


Blood Pressure in Matsyāsana

Subject—I **Fig. XXVIII**

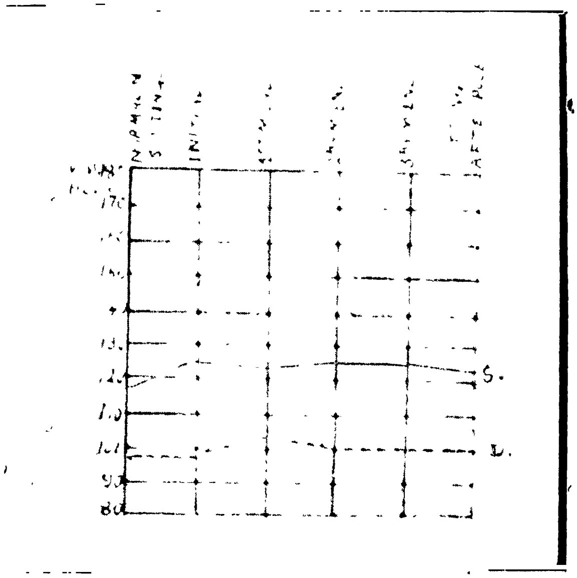


Subject—J **Fig. XXIX**



Blood Pressure in Matsyäsana

Subject—**K** Fig. **XXX**



The Semi-Scientific Section

N. B. Instruction in Yogic culture higher as well as lower will be given gratis at the Ās'rama to every one that earnestly seeks it.

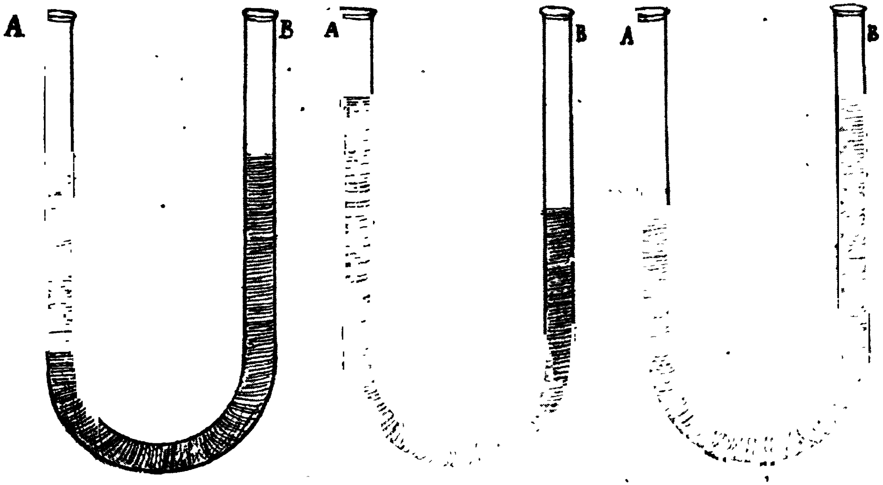
Following diseases, especially in their chronic condition can be effectively treated by the Yogic methods:

1 *Constipation.*
2 *Dyspepsia.*
3 *Head-ache.*
4 *Piles.*
5 *Heart-disease.*
6 *Neuralgia.*
7 *Diabetes.*
8 *Hysteria.*
9 *Consumption.*
10 *Obesity.*
11 *Sterility (certain types).*
12 *Impotence.*
13 *Appendicitis, &c.*

Therapeutical advice is given gratis at the Ās'rama to patients coming for consultation.

Arrangements have been made under the supervision of the Ās'rama for students and patients to stay on payment of actual expenses, Rs. 45 P. M. For details see P. 7 of this issue.

FIG. XXXI FIG. XXXII FIG. XXXIII



U-shaped Tube with a Liquid
To Explain Negative Pressure.

A NOTE ON BLOOD PRESSURE*

Blood Pressure may be defined as the amount of pressure exerted by the blood upon the walls of the vessels through which it is flowing. The left ventricle by its repeated contractions is forcing the blood through the arteries, capillaries and veins, back to the right auricle. Every additional quantity that is pushed into these vessels by the left ventricle, exerts a pressure upon the quantity of blood already present therein, and thus a continuous flow under some pressure is maintained throughout the circulatory system. But it should by no means be supposed that the pressure put upon the walls of the vessels by the blood in its course, is uniform all over the system Nay, it is quite otherwise. Blood pressure is highest in those parts of the arteries that are nearest the heart, and gradually falls along the arterial path, so that it becomes very low in the small arteries. It is lower still in the capillaries and lowest in the small veins, till at last in the large veins near the heart it is found to be *negative.*

Let us understand what is meant by *negative* pressure. If we take a U-shaped glass tube open at both the ends, and if we half fill it with a liquid, say water, we find that the water rises to the same level in both the limbs of the tube, A and B, (Fig. XXXI). This is because the atmospheric pressure is the same upon both the surfaces of water in the tube. Now if we hold the B-end in the mouth and breathe some additional air into the tube, the pressure upon the water surface in the limb B, will be greater than the pressure upon the water surface in the limb A, which is only equal to the usual atmospheric pressure. As a result of this additional pressure, the water level in the limb B will sink and that in the limb A will proportionately rise, (See Fig. XXXII). As soon as the tube is taken out of the mouth, the additional air breathed into the tube will escape through the free end B, and the two surfaces of water in A and B will again adjust themselves to the same level. If we once more hold the B-end in the mouth, but instead of breathing additional air into the tube, suck up a part of the air already present therein, the opposite result will occur. The water surface in the limb B will rise and the water surface in the limb A will sink in proportion. This is because by removing a part of the air from the limb B, we have decreased the pressure on the water surface in it, which consequently is less than the pressure on the water surface in A which continues to bear the usual atmospheric pressure.

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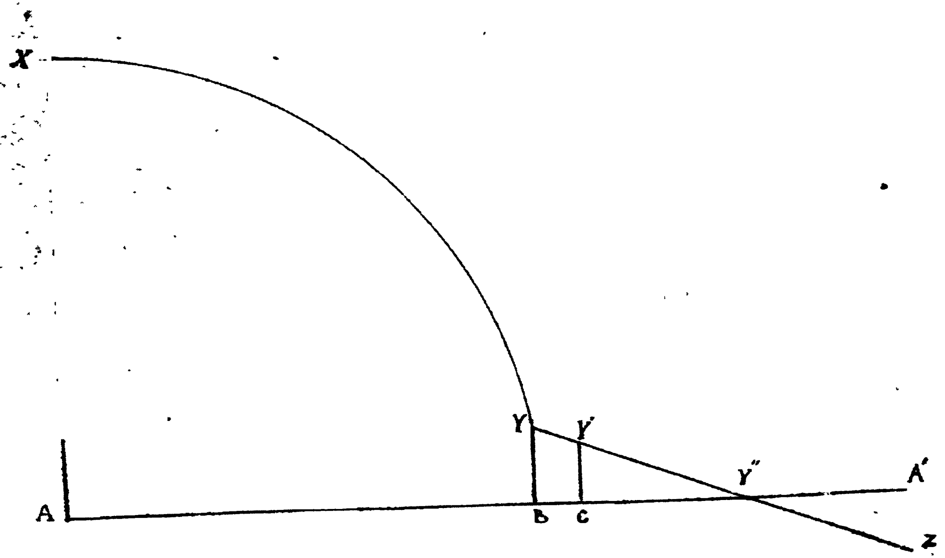
* Readers are requested to preface the study of this note by reading our article on the blood and blood circulation given in Y. M., Vol I, No. 4.

Now whenever a pressure is greater than the atmospheric, it is called *positive*; and whenever the pressure is less than the atmospheric, it is called *negative*. Thus the pressure on the water surface in B as represented in Fig. XXXII, is *positive*; whereas the pressure on the same water surface, as represented in Fig. XXXIII, is *negative*.

Fig. XXXIV gives a diagrammatic representation of blood pressure as it varies in the different parts of the circulatory system. X represents the height of blood pressure nearest the left ventricle. Throughout the arterial portion there is a progressive fall, till Y shows the pressure at the beginning of the capillaries. In these fine vessels pressure continues to fall again, but it is more than the atmospheric, even when the blood enters the veins. In a portion of the venous system represented by cy″ it is still positive, when at y″ it becomes equal to the atmospheric. Further on in the veins the pressure is negative and falls to the lowest degree nearest the heart.

From what has been said upto now, it will be readily seen that when we talk of the blood pressure of a particular man, it only means the blood pressure of the man as seen in a particular artery, for the same man would be found to



Diagrammatic representation of Blood Pressure
in
The Circulatory System.

X Height of Blood Pressure nearest the Left Ventricle.
A A′ Line of Atmospheric Pressure.
A B Arteries. B C Capillaries. C A′ Veins.
X Y Z Line Representing fall in Blood Pressure along Circulatory System.

have different pressures at different points of his circulatory system.

Now the question arises as to how this pressure is to be measured and which particular artery is used for recording it.

One of the early experiments to record blood pressure was tried with the principal artery of the thigh of a horse. A glass tube was inserted in the artery with the help of a cannula[*] and held at right angles to it. At once the blood rose to the height of 8 feet and kept oscillating there with every heart beat. There was a rise with the contraction and a fall with the relaxation of the heart. Inspiration also led to a rise every time. What was seen in this experiment was this. The blood pressure in the particular artery was sufficient to support a column of blood eight feet high; or in other words, was equal to the pressure exerted by a blood column of eight feet. If even before the arterial blood got into the tube, an extra quantity of blood filling 8 feet of the tube, would have been poured into it, this extra blood would have kept back the arterial blood, and would not have allowed it to enter the tube, because the pressure of the arterial blood and the pressure of the extra quantity, being equal, would have balanced each other.

This experiment proves that the blood pressure at a particular point in the artery is equal to the pressure sufficient to check the blood flow in it at that point. This principle being accepted, it will be readily seen that there is no need of puncturing the artery. The blood flow can be stopped even by pressing the artery from outside. Now if we can measure this pressure by means of a convenient instrument, we can ascertain the blood pressure of any individual without inflicting the least injury upon him. Such instruments are invented latterly and are being used by medical practitioners in their daily work. These are called *sphygmomanometers,* (Sphygmo, pertaining to the pulse; and manometer, measuring instrument).

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[*] A tube (Dim. of Canna, a tube) used for withdrawing fluids from the body. It is generally fitted with a pointed rod for puncturing the skin.

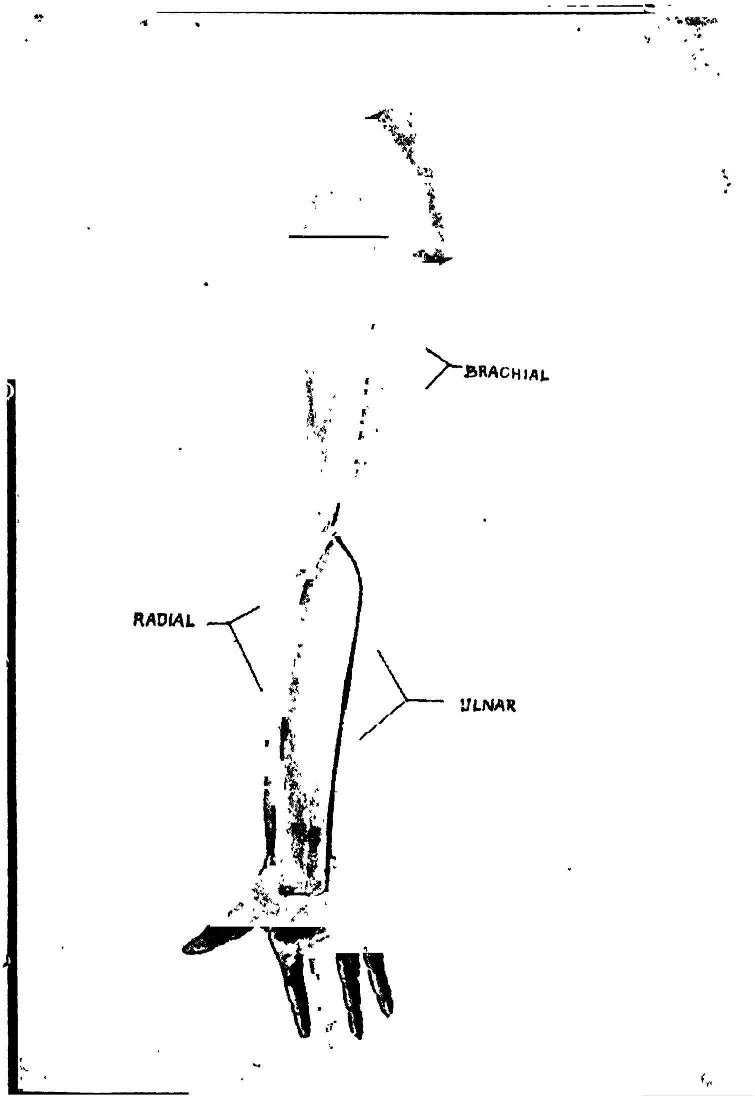
We have seen that a column of the blood can be used to counter-balance the arterial blood pressure. Now if we were to substitute mercury for the blood, we would require a much shorter column for this purpose, mercury being far heavier than the blood. As a shorter column has many advantages over a taller one, in sphygmomanometers mercury is used for measuring blood pressure. One millimeter of mercurial column is the unit. Therefore blood pressure is stated in millimeters of mercury, symbolically represented as mm. Hg. Thus when we say that a gentleman's blood pressure is 135 mm. Hg., it means that a mercurial column of 135 millimeters will be sufficient to counterbalance the arterial blood flow at a particular point in the gentleman's body.

Just as mm. Hg. has been fixed upon to represent a unit of blood pressure, so the brachial artery (see Fig. XXXV) has been singled out for taking blood pressure. This artery traversing the arm is not only superficial but is also big enough for being a convenient blood vessel for measuring blood pressure. So when we read records of blood pressure, the figures quoted there represent the blood pressure in the brachial artery only.

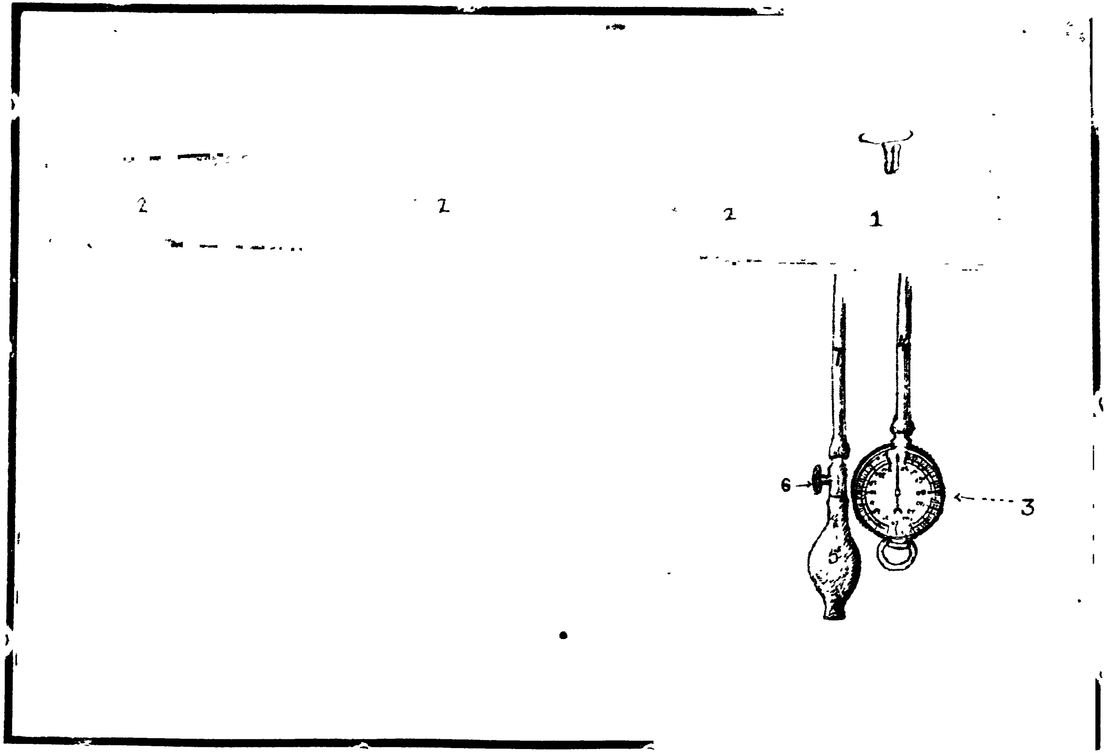
We have spoken of the mercurial sphygmomanometer. There is another type of this instrument which works only by the pressure of air and does not use mercury. Even in these instruments, however, mercurial unit of measurement is kept up, the same artery being used for taking measurements of blood pressure.

Fig. XXXVI represents such an instrument. No. 3 shows the manometer proper. It is fitted with a circular disc marked with a number of equal parts, say 160, each indicating two mm. Hg. The pressure is read by the excursions of a moving needle. Thus if the needle were to move across 75 parts, it would read 150 mm. Hg. as the blood pressure.

Fig. XXXV



Brachial & Radial Arteries Exposed.



Hand Sketch of a Sphygmomanometer.

1 Dilatable Rubber Bag.
2 Sleeve containing the Rubber Bag.
3 Manometer.
4 Rubber Tube connecting the Bag and the Manometer.
5 Air pump.
6 Screw to let out Air.
7 Rubber joining the Bag and the Pump.

This manometer is connected with a rubber bag, (Vide Fig. XXXVI, No. 1), by means of a rubber tube, (No. 4). The bag is fitted with another rubber tube, (No. 7), with an air pump, (No. 5), attached to it at the other end. By working this pump the bag may be distended with air. No. 6 shows the screw which when loosened, lets out air from the inflated bag. No. 2 represents a long sleeve of cloth holding the rubber bag.

The purpose of these different fittings will be clear to us when we understand the working of this sphygmomanometer which is as follows: — (Vide Fig. XXXVII).

The sleeve containing the rubber bag is wrapped round the arm so as to keep the former on the brachial artery. Next the pump is worked. The air thus pumped in inflates the bag which presses upon the brachial artery. When the pump is worked for some time, the bag begins to press so much upon the artery that the blood current is completely stopped. All the while the pressure is indicated by the moving needle.

Now we have already seen that the pressure which is just sufficient to check the blood flow in the brachial artery of an individual, represents his blood pressure. So if we can ascertain the exact pressure which stops the blood current in the brachial, we would get the blood pressure reading. But how are we to ascertain it? For if 120 mm. Hg. are able to obliterate the pulse, any higher pressure, such as 130 or 150, would do the same! Again upto now we have not taken into consideration the fact that the blood pressures differ at the same point, in the same artery, at one and the same time. Blood pressure due to the systole of the heart is greater than the pressure felt after the diastole. How are these two types of blood pressure to be determined?

There are two methods by which accurate readings of both the systolic and diastolic pressures can be taken. One is the *palpation* method, and the other is the *auscultation* method. The latter is more reliable than the former, and hence was used in our experiments recorded in the Scientific Section. It may be briefly stated thus.*

The pneumatic bag is securely fastened to the arm by means of the sleeve, (vide Fig. XXXVII). By working the pump the pressure in the bag is gradually raised, till at last it stops the blood current. This is ascertained by listening with a binaural stethoscope† at the bend of the elbow over the artery. No sound can be heard. But if we slowly relieve the pressure by letting out some of the air through the loosened screw, a loud and distinct sound will be audible at each heart beat. The moving needle that must have travelled far in the beginning, will return to a particular point and keep oscillating there indicating the jerky movement of the blood flow. The pressure noted at this point accurately indicates the *systolic pressure*. This represents the maximal arterial pressure. If we continue to relieve pressure very slowly, the sound becomes first indistinct and later loud and clear. Finally this third phase becomes inaudible. It is the end of this third phase which indicates the *diastolic pressure*. This represents the minimal arterial pressure.

Pulse pressure means the difference between the maximal and the minimal blood pressures, and can be obtained by deducting the diastolic pressure from the systolic.

We wish to close this note with a few remarks on average blood pressures. " The normal systolic pressure is about 90 mm. Hg. for children under 14 years of age; 100 to 115 mm. upto 21 years of age. From 21 to 65 it is usually 120 to 135 mm In very old age with rigid arteries it is often 200 mm. In women the pressure is 10 to 15 mm.

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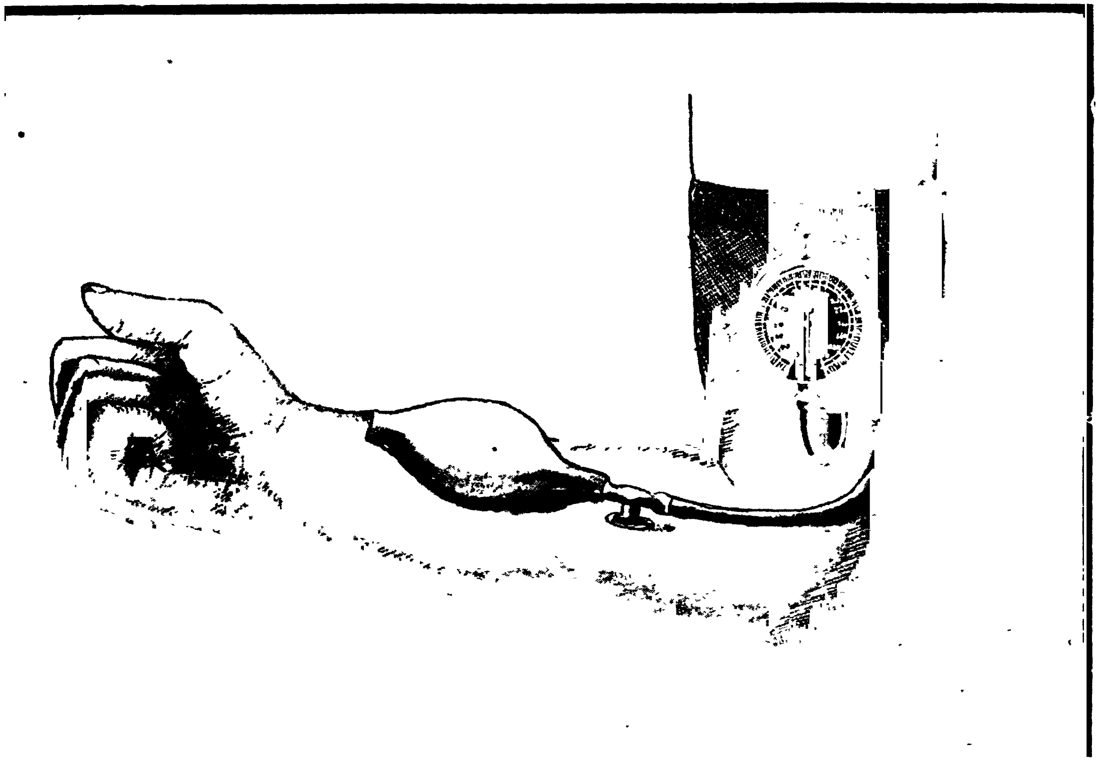
* We have to remember here that the brachial artery runs down a little below the bend of the elbow and bifurcates there into the radial and ulnar arteries. It is the radial that is used when the pulse is felt at the wrist. [See Fig. XXXV].

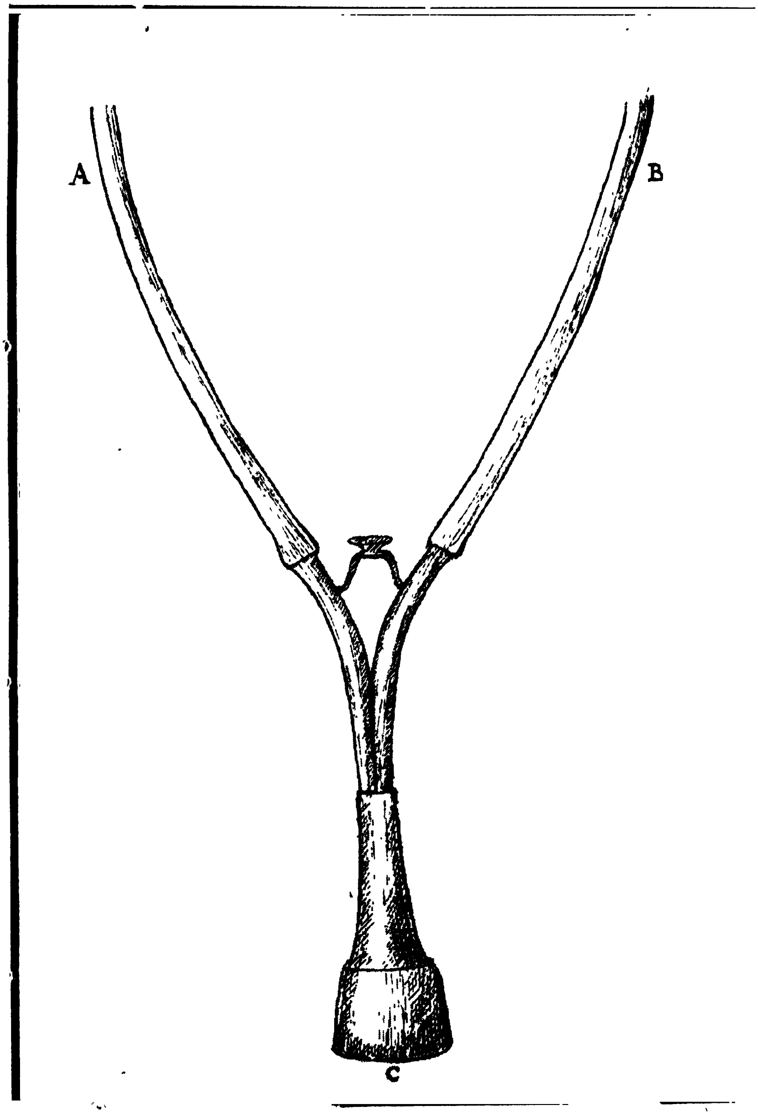
† A stethoscope is an instrument for ascertaining the condition of the organs of circulation and respiration by the sounds made by these organs. The binaural stethoscope consists of a Y-shaped tube, the flexible branches being applied each to an ear of the listener At times pieces of curved metallic tubes are fitted to these branches. In Fig. XXXVIII the ends a and b are flexible. The end c is placed on the organ.

Fig. XXXVII



A Working Sphygmomanometer.

Fig. XXXVIII



A Binaural Stethoscope.

lower. It is low, moreover, in children and in adults who have been kept in bed.

In healthy young adults the diastolic pressure is about 65 mm., but varies from 50 to 80 mm. in different individuals. From this it will be seen that the pulse pressure will show variations of from 30 to 50 mm. pressure.

It must be remembered that the blood pressure is subject to several physiological variations during the 24 hours' cycle; thus, exercise raises blood pressure; the prone position lowers the pressure; in fact, change of position, mental and physical exercise, emotion, digestion, etc. will each produce an effect one way or the other. It should, however, be noted that these changes are mostly transitory, as may be proved by frequent examinations; but that if they become more and more permanent they should be regarded with great suspicion, for there is then a strong probability that pathological changes are occurring.

If it be found that, after several examinations, the systolic pressure persists above 150 mm. Hg. or if it remains in adults below 100 mm. Hg., pathological conditions are certainly present.

APPENDICITIS & YOGIC REMEDIES

Appendicitis is the name given to inflammation of the vermiform appendix.

In order to clearly understand what this disease is, how it is caused, and how it can be treated by Yogic exercises, we will have first to study its anatomy.

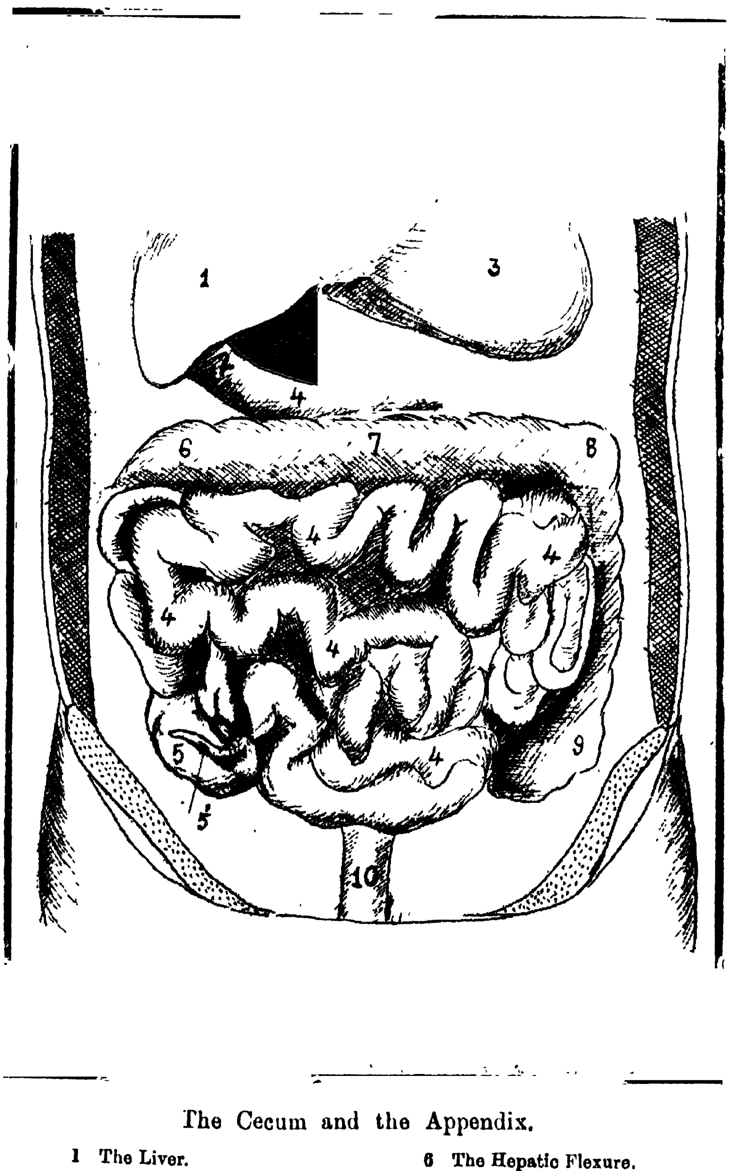
The appendix is a long and narrow tube starting from the cecum and communicating with it by means of an orifice which is placed below and behind the ileo-cecal valve. Fig. XXXIX shows the cecum and the appendix. The cecum has been drawn upwards and backwards so as to expose the appendix. Being of the shape of a worm this organ is called *vermiform*. It varies from 2 to 20 cm. in length, the average being 9 cm. The appendix enjoys great mobility; and it may be either upwards behind the cecum, or to the left behind the ileum, or it may hang downwards into the lower pelvis. A small canal runs through the appendix and opens into the cecum through the orifice already noticed. In a large majority of individuals the appendix lies in close contact with the psoas muscles, so much so that it may be said to be resting upon them. [For psoas muscles see Fig. XL].

The function of the appendix is yet a matter of controversy. But there is some evidence to believe that the organ secretes a fluid which it pours into the colon and thus lubricates it.

Having thus far defined the anatomy and the anatomical position of the appendix, we now proceed to study the causes that lead to appendicitis.

One of the principal causes of this disease is cecal constipation. Owing to the inactivity of the bowels, fecal matter lingers in the cecum for days together. In the colon and especially in the cecum the pressure of such fecal

Fig. XXXIX

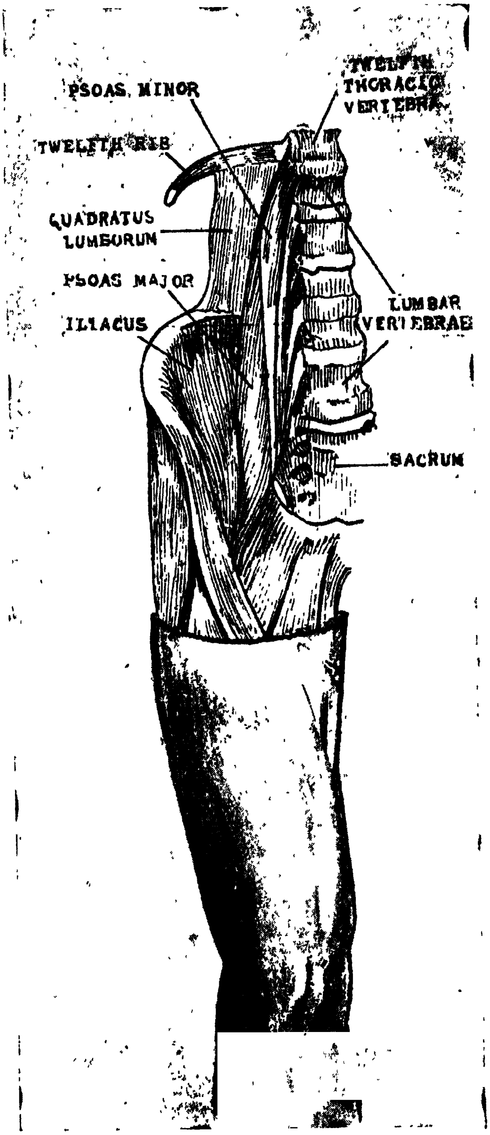


The Cecum and the Appendix.

1	The Liver.	6	The Hepatic Flexure.
2	The Gall-Bladder.	7	The Transverse Colon.
3	The Stomach.	8	The Splenic Flexure.
4	The Small Intestine.	9	The Sigmoid.
5	The Cecum.	10	The Rectum.
5¹	The Appendix.		

(The Cecum has been drawn upwards and backwards so as to expose the Appendix.)

Fig. XL



The Psoas Muscles.

matter is the highest towards the appendix; and for this reason such matter easily gets into this vermiform process, but finds it difficult to come out of it. Very often this matter when lodged in the appendix for a long time, is turned into a hard stony concrement. At times very hard substances swallowed in the food are thrown into the cecum through the small intestine, and these also pass into the appendix. Such foreign bodies set up irritation in the appendix which is consequently inflamed and appendicitis is the result.

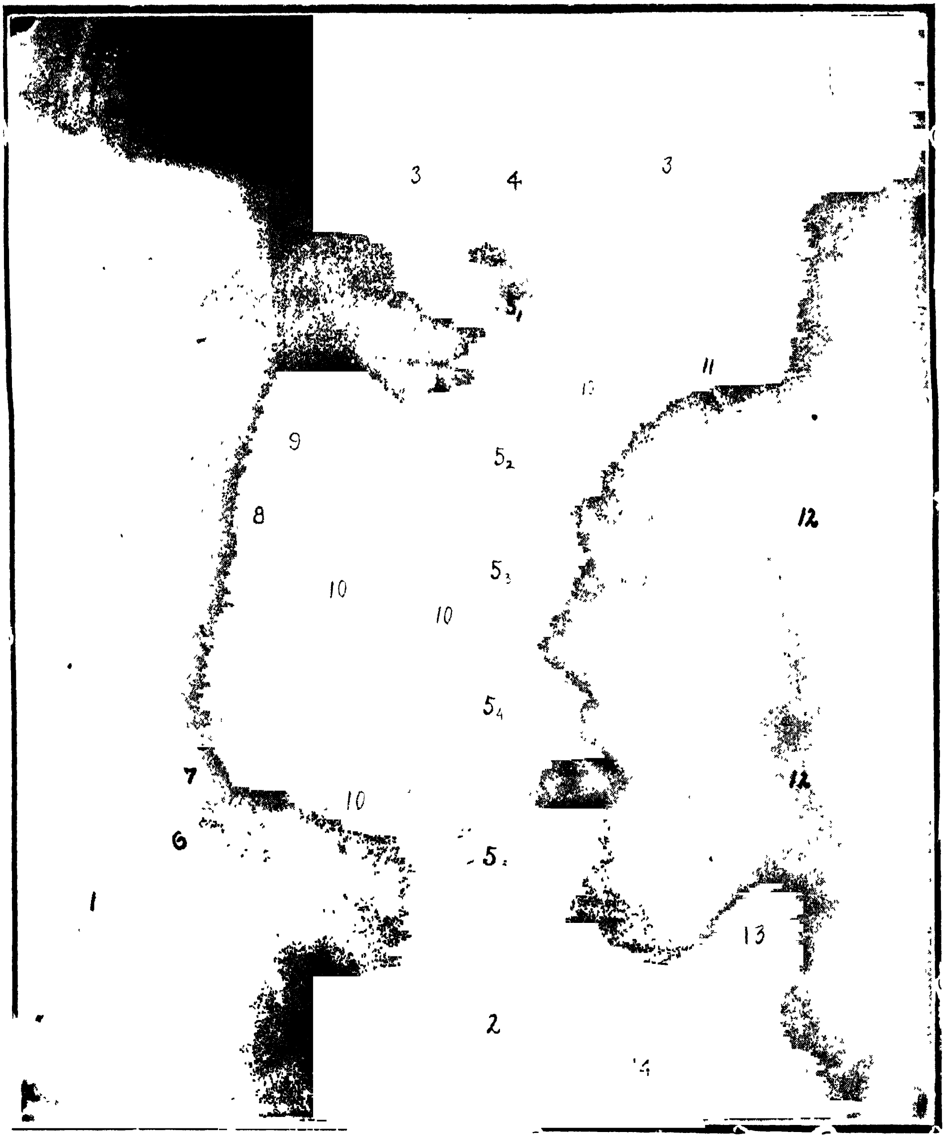
Or prolonged constipation may lead to the inflammation of the mucous membrane of the cecum. This catarrh spreads to the orifice of the appendix and obstructs it, so that the secretions are retained and lead to the distension of the organ. Under these circumstances, the appendix which even in adults is of the size of a slender worm, assumes a comparatively large size and may become as thick as a big thumb. An equally important and frequent cause of appendicitis is the anatomical position of the vermiform process. According to Offerhans, a surgeon in the Hague Hospital, 62 per cent. of normal men have their appendix in a very close contact with the psoas muscles, so that the former may be said to be resting on the latter. Now in our daily life, there are so many occasions when the psoas muscles would contract and press against the appendix. Running and cycling perhaps exert the greatest amount of pressure. This constant pressure irritates the appendix, its orifice is closed, and disease follows. Owing to this pressure, the blood supply of the organ is also interfered with and pathological conditions are thoroughly established. The degenerated appendix forms kinks with the adjacent viscera and very acute symptoms manifest themselves in course of time.

There are some other causes which occasionally lead to this disease; but as they are not so important, we prefer to leave them out of consideration.

This statement of the causes of appendicitis will clearly show us that the disease can best be prevented by Yogic practices. In the first Vol. of the Yoga-Mīmānsā, it has been conclusively proved that Uḍḍiyāna and Nauli are the best preventive exercises for constipation in general and cecal constipation in particular. And if these exercises are capable of preventing cecal stasis, they must equally be capable of preventing appendicitis resulting from it. We are reproducing from the first Vol. two radiographs here. Radiograph I represents the normal condition of the colon contents, when they consist of an ounce of opaque injection; and Radiograph II shows the condition of the same contents during Uḍḍiyāna. These radiographs when compared as regards the cecal contents, will show that the cecum can be completely emptied by means of Uḍḍiyāna. [For details see Vol. I, PP. 15-24]. In order to avoid the least possibility of the disease, the Yogic flushing of the colon may be practised, so that no fecal matter would be allowed to linger in the cecum, and thus get an opportunity of creeping into the appendix.

Now we want to see whether or not Yogic exercises are available for preventing appendicitis resulting from the second cause. In the first Vol. of this journal we have given sufficient radiographic evidence to show that the cecum, and consequently the appendix, can be raised considerably from its normal position by means of Uḍḍiyāna. It can be drawn away towards the spine from its normal position in the iliac region, by the exercise of Nauli. The upside down position of the intestines during S'īrshāsana and Sarvāṅgāsana must also be dislodging the cecum and the appendix from their ordinary positions. Thus all these exercises relieve the appendix from the pressure exerted upon it by the psoas muscles; and help it to get its natural blood supply by removing the mechanical interference of these muscles. Any tendency to kinking would be checked by these Yogic practices, as they bring into play the full mobility of the appendix and the cecum.

Fig. XLI **Radiograph I**



Normal Position of the Colon
with
One Pint Opaque Injection.

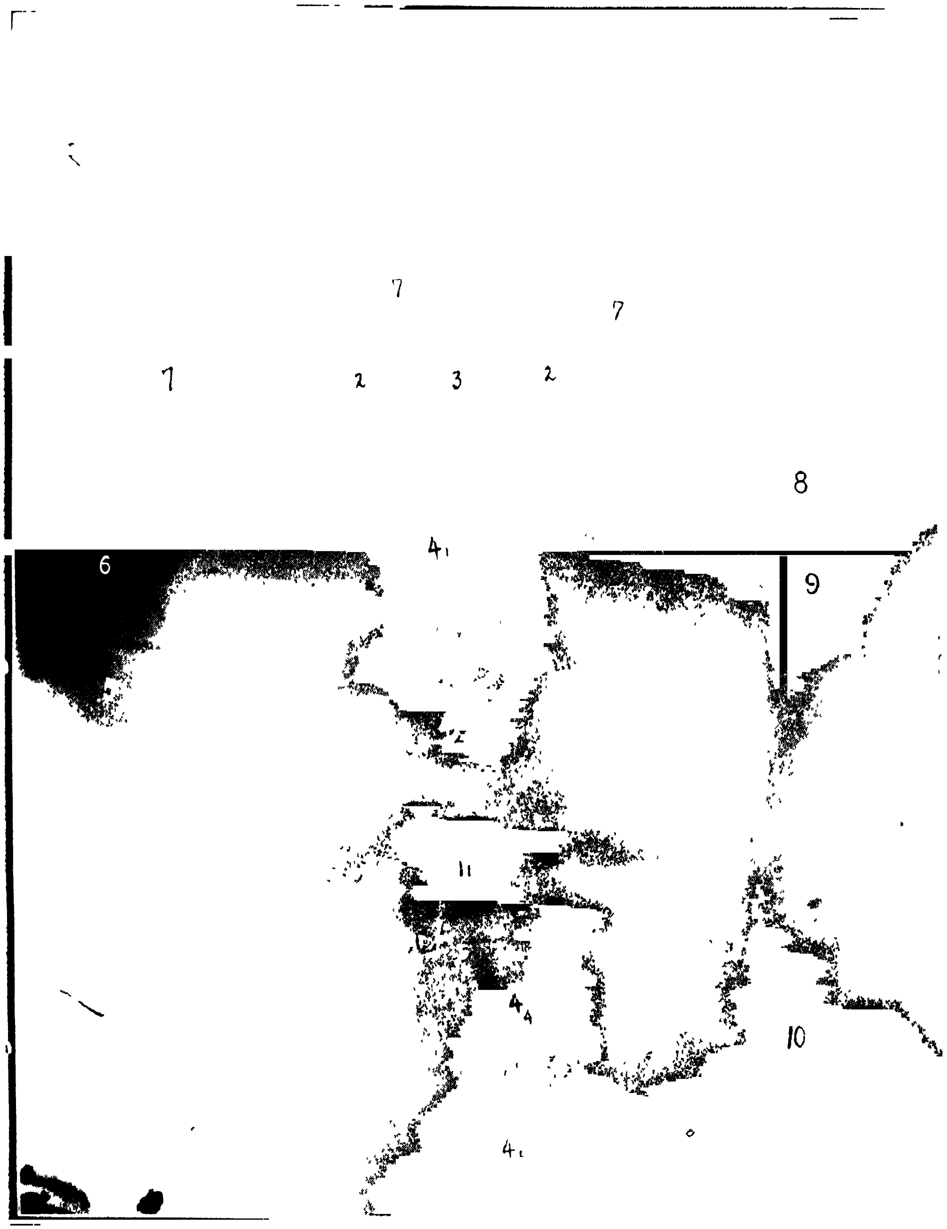
REFERENCES TO RADIOGRAPH I

1 The Iliac Bones.
2 The Sacrum.
3 The Twelfth Ribs.
4 The Twelfth Dorsal.
5_1 The First Lumbar.
5_2, 5_3, 5_4, 5_5, The Successive Lumbar Vertebræ upto the fifth.
6 The Cecum.
7 The Ileo-Cecal Valve.
8 The Ascending Colon.
9 The Hepatic Flexure.
10 The Transverse Colon.
11 The Splenic Flexure.
12 The Descending Colon.
13 The Iliac Colon.
14 A Part of the Pelvic Colon.

REFERENCES TO RADIOGRAPH II

1 The Left Iliac Bone.
2 The Twelfth Ribs.
3 The Twelfth Dorsal.
4_1 The First Lumbar.
4_2, 4_3, 4_4, 4_5, The Successive Lumbar Vertebræ upto the fifth.
5 The Upper fourth of the Ascending Colon.
6 The Hepatic Flexure.
7 The Transverse Colon.
8 The Splenic Flexure.
9 The Descending Colon.
10 The Iliac Colon.
11 One Anna piece marking the umbilicus.

Fig. XLII **Radiograph II**



Position of the Colon and its Contents
during
Uddiyāna.

In this way we can clearly see that Yogic practices can defy appendicitis as no other exercises can. These practices can be easily picked up in young age, and require only a few minutes' working every day. As will be shown later on, in the pages of this journal, these exercises are also capable of giving the best of mental and physical energy. When all these facts are taken into account, do we not think it desirable for every young man to learn these Yogic exercises, and thus free himself from the danger of appendicitis to which he is more prone than the members of the opposite sex or even old members of his own sex?

The next question is whether or not these practices are available for people who are already suffering from appendicitis. As far as our own clinical experience goes, we can say that where the disease has become chronic, these Yogic exercises are a great help in curing it. Our readers will find in the Miscellaneous section, a letter from one of the young men who were suffering from chronic appendicitis and who were effectively treated by us according to Yogic methods. Care must be taken not to start exercise before the acute symptoms* have totally disappeared; and even when it starts afterwards, it must do so only under expert supervision. Our researches in the field of Yoga have as yet given us no clue to the treatment of acute appendicitis where suppuration has commenced. Therefore, we gladly recommend a surgical operation to patients in this stage, as neglect at this juncture is sure to be fatal.

But to-day the medical world believes that only surgical remedies are competent to cure appendicitis, acute or otherwise, and would earnestly advocate an operation in every case of the disease. Without the least prejudice against the wonderful art and science of surgery, we maintain that this belief is responsible for much irresponsible work in the actual medical practice.

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* In appendicitis a patient is taken with severe abdominal pain, at first diffused over the abdomen, but soon more pronounced in the appendicular region. An amount of bodily discomfort is experienced, characterised by nausea, vomiting, and slight fever. The tongue is furred, the appetite fails, there is thirst, and the bowels are constipated. The abdomen may be somewhat distended, but is generally rigid; and there is tenderness in the right iliac region. These symptoms may continue for a few days, the vomiting, pain and tension may disappear under treatment, and the trouble may subside. [Adapted from Taylor's Practice of Medicine, PP. 429 & 430]. Complete rest, milk diet, enema and fomentations are competent to cure acute symptoms of appendicitis where formation of pus has not begun.

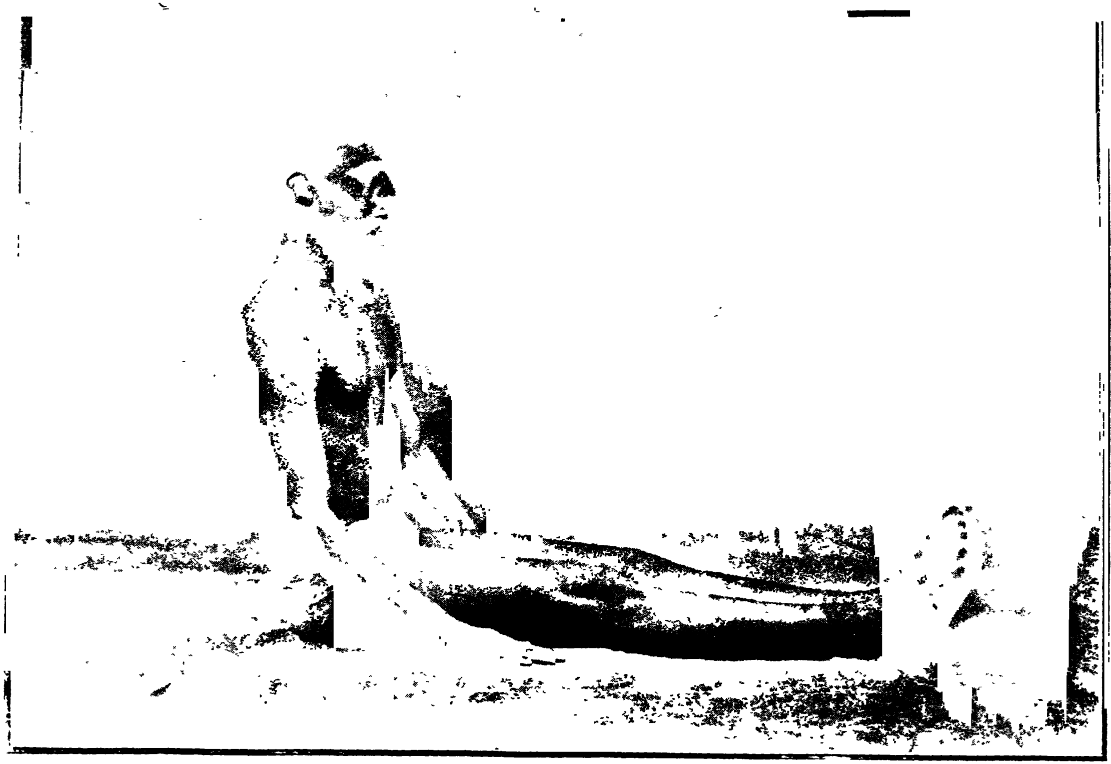
We do admit that during the acute stage there is no means of knowing whether the symptoms would subside or whether they would lead to fatal developments. This inability to judge from outside makes an operation desirable, to err on the safe side; and we would pronounce such surgical work as perfectly responsible. But when we take into consideration the extremely small percentage of operations performed during the attack, and the overwhelmingly large percentage of operations that are done after the attack has subsided, we vividly realise the mistaken logic of the medical world! For when the acute symptoms disappear, there is every scope for other remedies to be tried. As we have shown above Yogic remedies are certainly available for treating the disease in its chronic condition.

Generally speaking almost all the people suffering from appendicitis are either suffering from constipation or have an unfavourable anatomical position for their appendix in regard to the psoas muscles. Every one of us can know whether or not he is habitually constipated. Every one of us can also know whether his appendix is going bad for its inconvenient position. If one has to complain of pains in the appendicular region, usually after quick walking or running, and especially after cycling, and at times even without these, one should be sure of the bad position of one's appendix. So it is within everybody's power to know whether he is liable to suffer from appendicitis. If just after this knowledge, though not earlier, every one of us starts with the Yogic exercises indicated above, there will be no cause for appendicitis and humanity will be free from this treacherous disease!

The Popular Section

N. B. The Director of the Kaivalyadhāma entreats every man of means to show his active sympathy for the Ās'rama.

Fig. XLIII



Preparation for Pas'chimatāna.

PAS'CHIMATĀNA

or

THE POSTERIOR-STRETCHING POSE

THE NAME :—

This posture is called Pas'chimatāna because it stretches the posterior muscles of almost the whole body. In Sanskrita Pas'chima means the posterior, and the root Tan means to stretch; and thus Pas'chimatāna means stretching the posterior. But the text-books on Yoga give also a spiritual interpretation of the name. The pose is capable of rousing spiritual forces that are felt travelling upwards through the spine. It is to connote this capacity of the Āsana that it is called Pas'chimatāna.

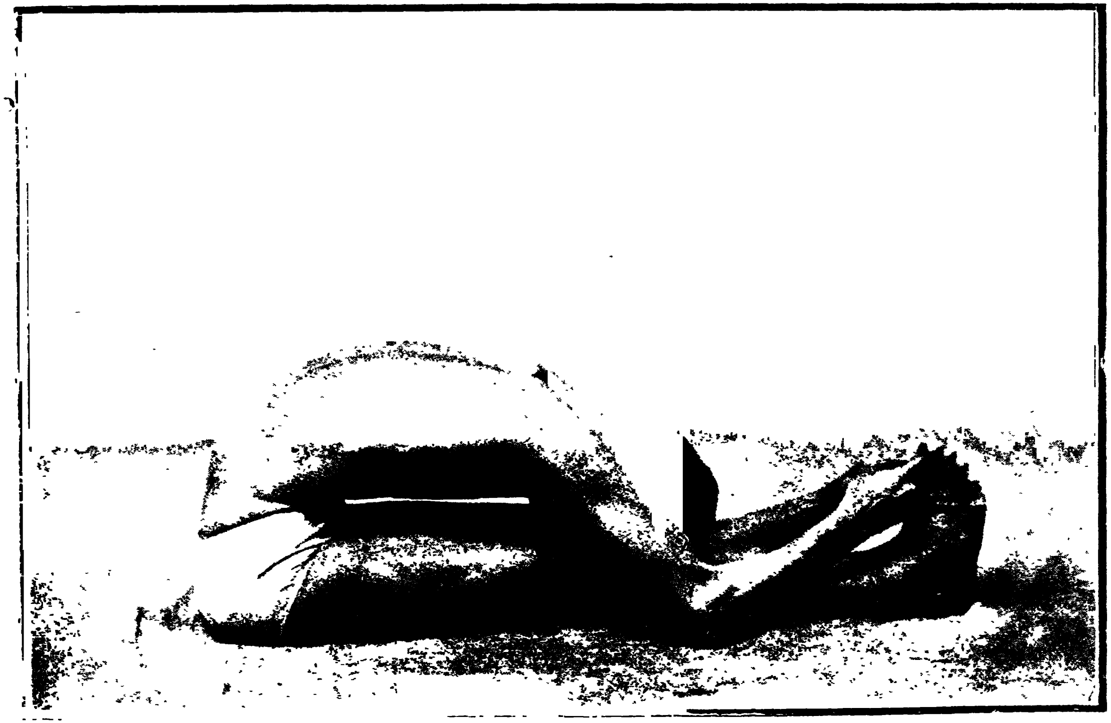
THE TECHNIQUE :—

The student begins by fully stretching out his legs on his seat, and keeping them close to each other, (Fig. XLIII). He then bends forward a little, makes hooks of his forefingers, and catches hold of his toes, the right toe with the right finger and the left with the left. A pull on the toes with the fingers, secures not only a full relaxation but a complete stretching of the posterior muscles of the legs. The student then further bends forward in the lumbo-sacral region, and stretching his trunk along his thighs, rests his face on his knees. This entirely doubles his body through the loins. The distance between the shoulders and the toes is much shorter than the hands in this pose. Hence they are bent in the elbows, and if possible are made to rest on the ground as shown in Fig. XLIV. Care is taken not to allow the knees to bend, straight knees being essential for maintaining a full stretch of the lumbo-sacral region. Fig. XLIV gives a side view of the Āsana, and Fig. XLV represents a back view of the same.

We have often seen people whose spine is so stiff that they cannot even reach their toes with their fingers. If they try to bend, they are required to raise their knees which spoils the pose. In the case of nearly every beginner, the hamstring muscles—muscles which when contracted enable us to bend our knee and which are situated at the the back of it—do not possess the elasticity necessary for this Āsana. But young and well-built persons can soon make them sufficiently elastic, so that there is little trouble in securing the desirable bent. But people who are advanced in age, or are prematurely old, or have stiffened their muscles by overexercise, experience an amount of difficulty in bending their trunk effectively while maintaining a straight knee.

There is absolutely no reason for these people to become impatient over the matter. They should proceed into it slowly and steadily. Instead of catching hold of their toes they should seize their legs, either in the ankle or even higher up nearer the knee. The trunk should be bent forward as far as possible, but the knee should always be kept stiff. This little bent maintained for a time will invariably make further flexing possible. As usual jerks, either violent or mild, should be studiously avoided. In a-few days the spine will begin to show signs of improved elasticity and the hamstring muscles will be better able to bare the necessary strain. When the toes are reached they should be hooked by the fingers and the whole system of

Fig. XLIV



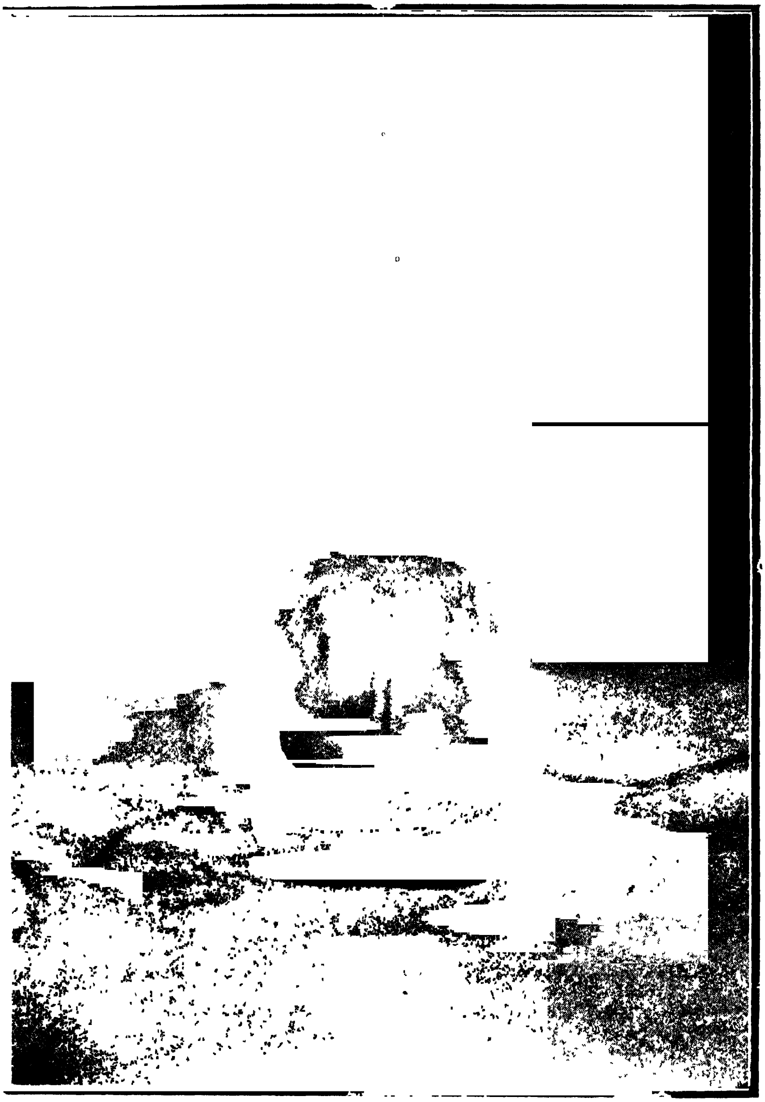
Pas'chimatāna

or

The Posterior-Stretching Pose.

(Side View)

Fig. XLV



Pas'chimatāna

or

The Posterior-Stretching Pose.

(Back View)

posterior muscles stretched by degrees. Elasticity will develop day after day making ultimately the full pose not only possible but even comfortable. In any case patience and perseverance must overcome every difficulty. Regularity is essential; but we also advise punctuality. These two will enable every Yogic culturist to perform any Āsana within a reasonably short period.

For the purpose of physical culture, not more than three minutes will be the maximum time to be devoted to this pose. As regards the minimum, if a Yogic culturist is able, just in the beginning, to secure the full bent required for the full Āsana, he may give only 15 seconds to start with and slowly develop it to 1 minute only. But if, on account of the stiffness of muscles, only a partial bent become possible at the outset, the Yogic culturist should repeat the pose two or three times over and make up a total of one minute. As the spine becomes more and more elastic the three attempts may be fused into one, covering a period of one continuous minute.

POINTS OF STUDY :—

(*a*) Muscles :—

Nearly all the posterior muscles of the body and particularly the hamstring muscles at the back of the knees are relaxed and fully stretched. The muscles in front of the abdomen, especially the two recti are powerfully contracted. But a Yogic culturist can, by practice, relax them completely; and may then take to Uḍḍiyāna during this pose. The side muscles, the psoas major, psoas minor, and iliacus are very vigorously contracted and stand in the same condition throughout the posture. All these contracted muscles strongly compress the abdominal viscera.

(*b*) Vertebræ :—

The lumbo-sacral vertebræ are posteriorly stretched.

(*c*) Nerves :—

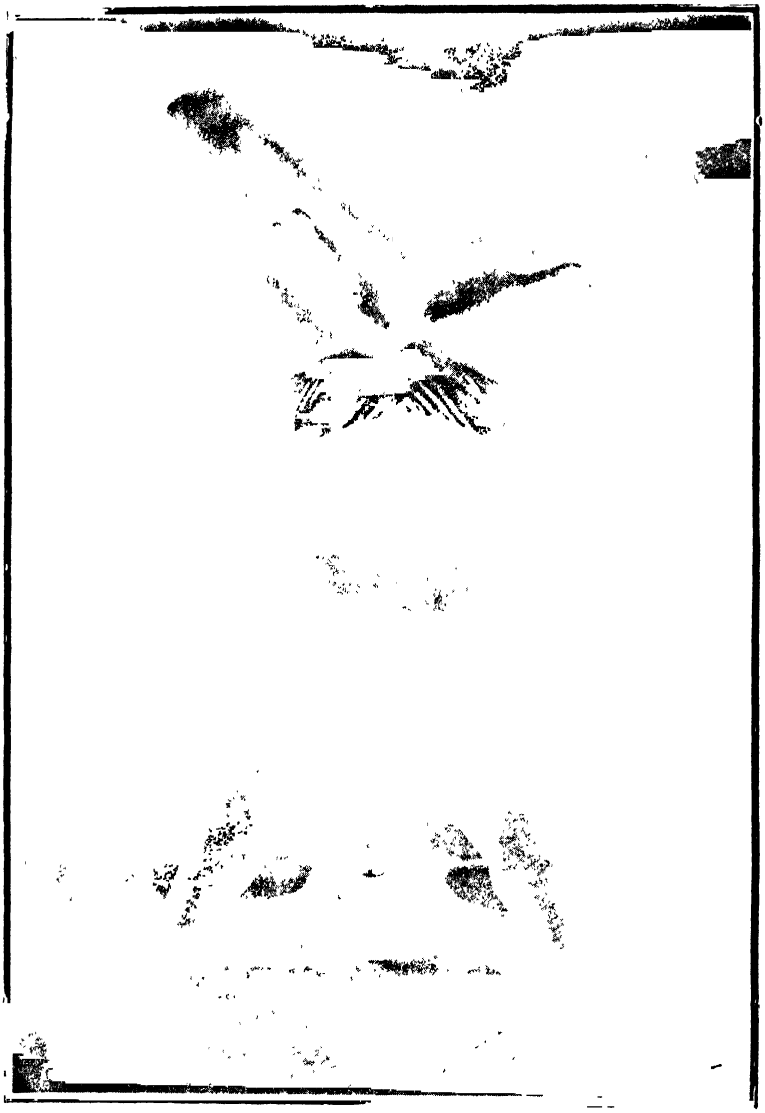
Spinal nerves arising from the lumbo-sacral region are all toned up.

NOTE—

Yogic texts strongly recommend Pas'chimatāna for rousing spiritual forces. For this purpose, however, the **Āsana** has to be practised daily for upwards of an hour according to the needs of the individual.

On the physical side the pose is a very good exercise against constipation. The contracting muscles compress the intestines powerfully and move them to action. During the practice, the Uḍḍiyāna may be repeated with great advantage against intestinal inactivity.

Fig. XLVI



S'īrshāsana.

(First Development)

FURTHER DEVELOPMENTS OF S'ĪRSHĀSANA

As we have given in the first Vol., an amount of information on S'īrshāsana, we deem it desirable to give here its further developments which constitute excellent exercises for the spine and the abdomen, though they are a bit difficult to perform. These developments are three, and we propose to notice all these in this article.

FIRST DEVELOPMENT

THE TECHNIQUE:—

The different stages through which the full Topsytury Pose can be attained, have been clearly stated in the 2nd No. of the 1st Vol. of this journal. [Vide PP. 129-138]. When the Yogic culturist gets a complete control of the Āsana, be finds himself so thoroughly balanced that he can throw his body into different folds and twists, without fearing a collapse, although he continues to stand on the head all the while.

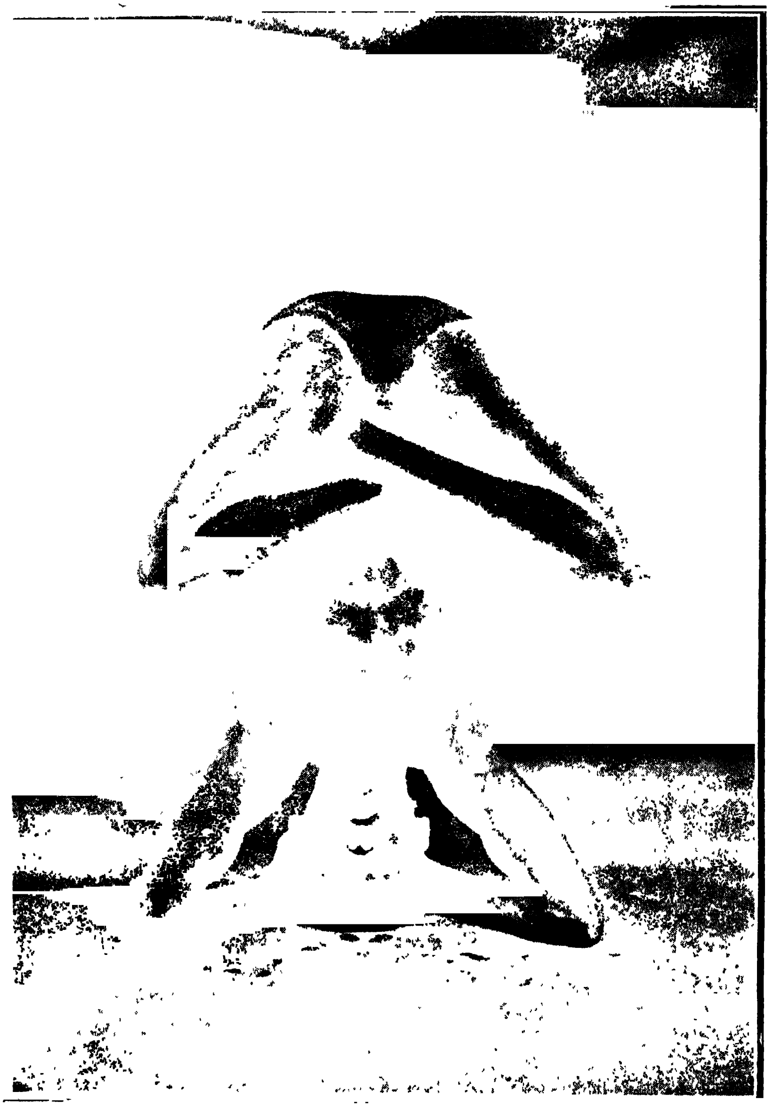
Instead of keeping the legs erect, they are to be folded into a foot-lock. This constitutes the first development. For this purpose the student bends one of his legs, preferably the right, in the knee-joint; and folding it upon itself, sets the same in the opposite hip-joint, so that the right heel lies at the root of the left thigh and the upturned sole stretches itself along the same towards the knee. [see Fig. XLVI]. One may find it difficult to secure this adjustment at once. In that case the inverted foot might be set anywhere on the opposite thigh, and then slided down to the required position with the help of the contracting sole pressing upon the thigh.

During this attempt the student should maintain his balance *a little* in the front, so that he would find it easier to recover it, should he chance to lose the same in his movements. It is our common experience that we are generally able to save ourselves from a fall, should we tend to fall forward; but we are sure to come to the ground, should we lose our balance in the opposite direction. This is because a tendency to fall forward is counteracted by the back muscles of the legs, as they immediately begin to act from the foot, which by its contraction and adjustment gives a good support to the legs. But in a backward fall there is no support, and the balance, once lost, can rarely be regained. The same principle applies to S'īrshāsana. The head and the forearms resting on the ground form a good support for the whole body; and taking the place of the foot in our ordinary standing, save the Yogic culturist from a forward fall. Here the muscles of the upper extremeties and the thorax act just as the muscles of the legs in our usual standing position. But a tendency to fall backward can scarcely be checked; because there is nothing that can effectively support the head from behind. The finger-lock offers little help in this respect.

When the right foot is properly set in its place, the left leg is bent in the knee and similarly adjusted in the right hip-joint. This completes the first development. The whole spine stands erect and the foot-lock is held in a line with the trunk.

As will be noticed at the end of this article, this development is technically called Utthitordhvapadmasāna. Fig. XLVI represents a front view of this Āsana.

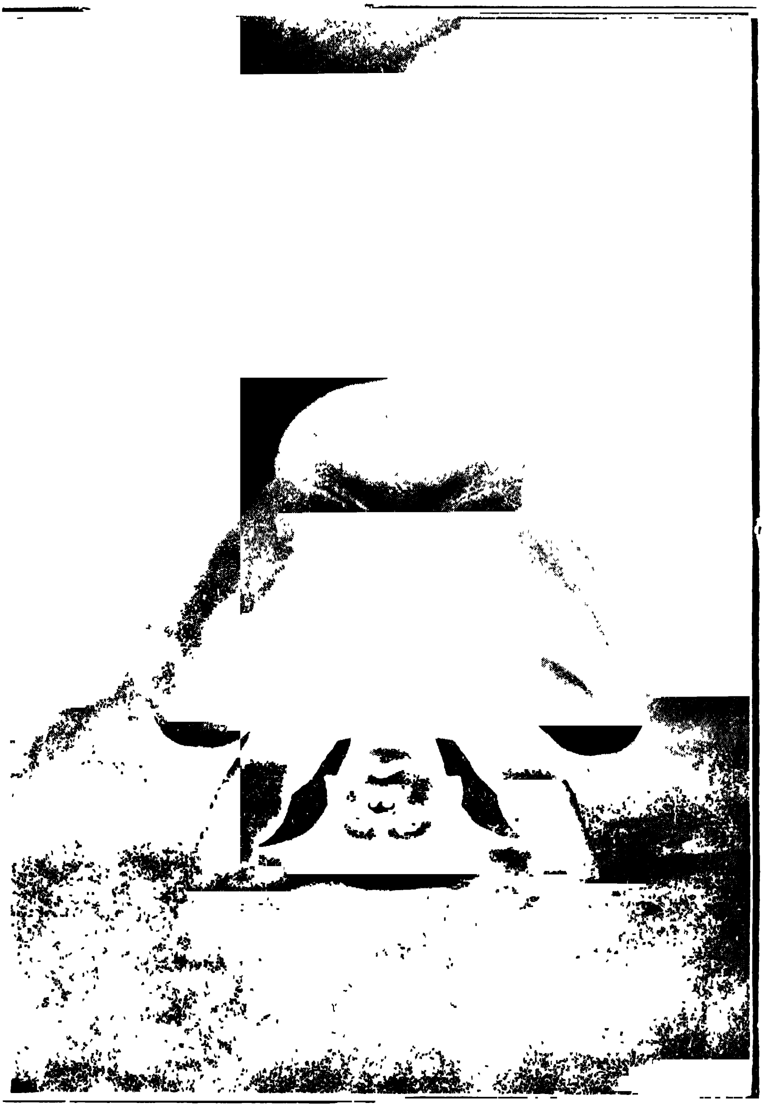
Fig. XLVII



S'īrshāsana.

(Towards the Second Development)

Fig. XLVIII



S'īrshāsana.

(Second Development)

Fig. XLIX

S'īrshāsana.
(Third Development)

SECOND DEVELOPMENT

After maintaining the foot-lock straight for a while, the student folds it upon his abdomen through the hip-joint, (Vide Fig. XLVII). When the folded legs touch the abdomen, the foot-lock is slided down along the thorax to the arm-pits. This completes the second development as shown in Fig. XLVIII. This part of the Āsana throws into powerful contractions the abdominal muscles and vigorously stretches the back muscles and the spine.

THIRD DEVELOPMENT

The third and the last development is reached, when the trunk is flexed upon the arms, through the shoulder-joints, the foot-lock still resting in the arm-pits. The trunk is folded in almost every important joint and is thrown, as it were, into a knot! (Vide Fig. XLIX). The whole spine and back form a regular curve and the abdominal muscles experience the most vigorous contraction.

NOTE —

These three developments of S'īrshāsana constitute an excellent exercise for the deep and superficial muscles of the back as well as for the muscles of the abdomen. The developments may be retraced; and when this folding and unfolding is repeated several times, all the muscles of the body are alternately contracted and relaxed. At times the student starts his S'īrshāsana not with his free legs, but with his legs folded in a lock. In that case he reaches the third development first; and then going through the second and first developments, he ultimately unfolds his foot-lock and holds his lower extremities straight in the air to attain the full pose of S'īrshāsana. As this procedure is difficult beginners should not take to it.

When this latter procedure is followed the student has to start with a foot-lock. Now this foot-lock *mainly* constitutes Padmāsana; and as in the first development, this foot-lock is hoisted, that development is called Utthitordvapadmāsana, meaning hoisted Padmāsana. (In Saṅskṛita- Utthita=Raised and Ūrdhva = On high).

SARVĀṄGĀSANA

or

THE PAN-PHYSICAL POSE

PART III

In the second part of the article we have discussed the effects of this Āsana upon the venous blood circulation. In this part we want to see how far it helps the cure of seminal weakness.

Seminal weakness expresses itself in various ways. It is not proposed to exhaust the different disorders to which it leads. We would single out only two or three that are universally prevalent, and discuss their pathology, so that we can clearly understand how Sarvāṅgāsana can remove these pathological conditions. As we cannot cover the whole of even this limited field, we think of reserving a part of the discussion for the next number, taking up only a part in this issue.

Premature ejaculations* and feeble erections† are the ailments that we would notice here. Setting aside the quack literature on this subject with which the market is flooded, and taking into account the writings of sober medical men and psychologists, we find that these two disorders have become so common that they have embittered the life of so many youths, Indian as well as foreign. We ourselves are receiving a number of letters every week, letters which relate at length the errors of youthful indiscretion, and the consequent horrors that are tormenting the souls of their writers. Youths thus ailing are perpetually haunted by a sense of unworthiness which does not leave them even in their dreams! Gloom at home, gloom abroad, gloom and nothing but gloom fogs their brain everywhere! Darkness, unending darkness, hangs over not only their present life but threatens to cloud the future also! Alone and uncomforted as they are, the unmarried section of these unfortunate youths tries to forget his weakness by drowning his anxieties in the din and dash of the busy city life by day, and by sleeping over his worries at night! But the married—they have a partner before whom it is worse than death to confess their weakness; and from whom there can be no hiding, at least, in this regard! We have met with many a youth of this unlucky class and have heard them confessing that even the idea of meeting the wife chills their heart!

---

* We are quite aware of the fact that the contents of today's article will be somewhat shocking to many of our non-medical readers. But in a scientific journal such discussions are unavoidable. We will, however, take care to see that we do not cross the limits of scientific decency.

† A careful study of our note on the reproductive organs of man given in the first Vol. is essential for understanding this article. We have reproduced here Fig. XCII of the first Vol. as Fig. L of this for ready reference.

In their agony, these poor souls approach medical men for treatment, and we are glad to state that the medical profession honestly and sincerely tries to reach relief to these unlucky creatures. But so far as we know medicines have little effect upon these devilish disorders. If stimulants are advised, ejaculations grow more and more premature; and if the sufferer is kept on sedatives his erections tend to become more and more feeble! Really speaking in the case of internal treatment, sedatives are the only drugs that are capable of giving some relief, provided the patient faithfully carries out the instructions of his medical adviser and continues to put faith in the ultimate cure. But sedatives naturally impair sexual excitement, at which the weak-minded sufferer is alarmed; and the result is that he soon loses confidence in the treatment which he ultimately gives up.

Is it possible for Yogic practices to save these sexual wrecks and make their lot happy? We cannot return an emphatic yes! Because during our twenty years' experience in the matter, we have not seen even a single case where sexual powers, once seriously damaged, were restored to their normal strength. We do admit that we have been trying Yogic therapeutics only of late, and that its unlimited possibilities have not yet been fully fathomed. But we maintain that we have to be guided by our own experience; and so far as it goes, there is nothing that can guarantee a complete recovery of sexual powers.

This statement of ours should not be interpreted to mean that Yoga is helpless in reaching relief to people who suffer from the disorders we have here under consideration. Far from it. By our personal experience, we can say that Yogic remedies are by far the best that we have ever seen, and that they are capable of making up *much* of the damage done to sexual powers, though they may not be able to effect a complete cure.

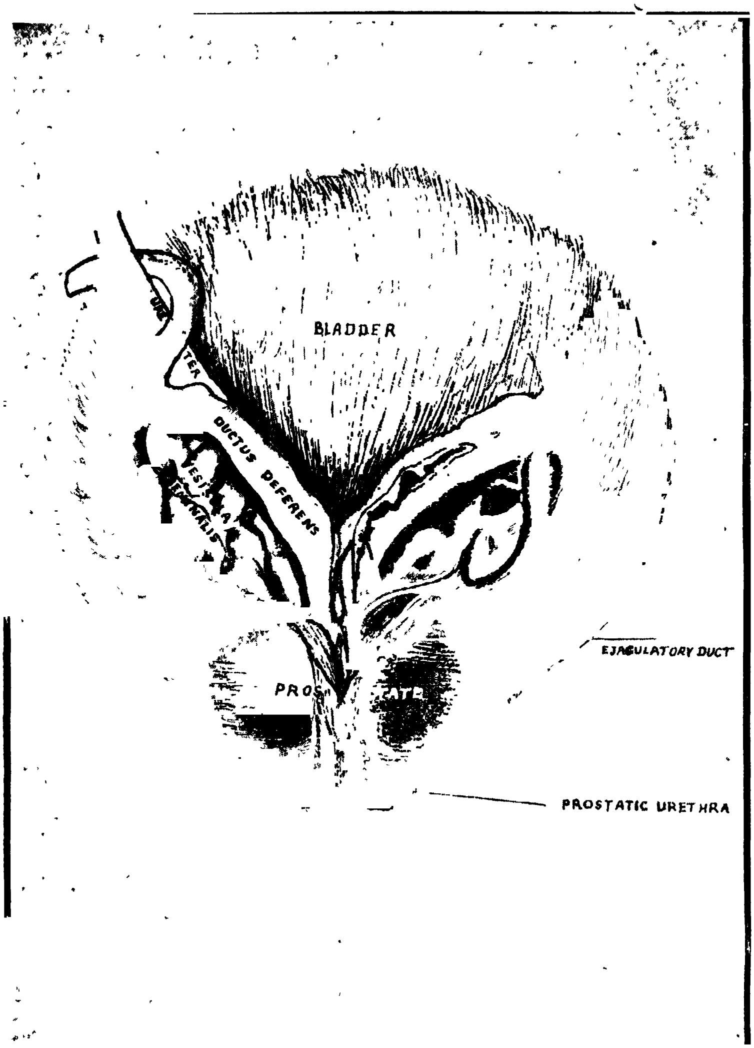
In this part of the article we are concerned only with the two disorders—premature ejaculations and feeble erections. In what follows we shall try to study the effects of Sarvāṅgāsana on these defects But before we do this, it is essential for us to know a few anatomical and physiological facts about the ailments under discussion; and we now proceed to pass these facts under rapid survey.

The principal sexual organ of the male is an erectile structure. The power of erection of this organ mainly depends upon the particular arrangements of its veins and the special construction of muscles that check the venous circulation of blood in this organ. Inside the external fibrous sheath, there is situated a densely complicated plexus of veins. These veins are short and interlace and anastomose with each other in all directions. They are capable of great dilatations; and as such collapse when empty, but swell enormously when filled with the blood. During excitement, under nervous impulse, the arteries become dilated and send unusually large quantities of blood to this structure. This sudden and abnormal inflow of blood distends the veins which, as it were, unable to contain the excessive influx, become swollen; and the whole structure passes into a state termed erection. This erection would have been momentary and weak, had there been no arrangements to retain the excessive quantities of blood flowing in under excitement. For the outgoing veins would have immediately emptied the organ of its abnormal blood contents. But there are two checks put on the venous circulation of this part. First the veins which drain this structure are very small in size, far smaller than those which form the net-work inside the organ Naturally they are unable to carry away the unusually excessive quantities of blood that swell the structure. There is however, another arrangement for effectively checking the outflow of the blood that rushes in under excitement. This is in the form of a muscle which stands by the side of the out-going veins. This muscle when relaxed allows the venous circulation to have its own way; but when contracted presses upon the veins and almost stops their work. Now sexual impulse throws this muscle into a vigorous contraction and thus effectively checks the out-flow of the venous blood. Thus the arteries push in excessive quantities of blood which cannot get out, and which, therefore, hold the organ in erection.

After the sexual excitement subsides, the muscle becomes relaxed; and the blood pressing against the coats of the organ slowly finds its way out. When the structure is drained of the surplus blood, it becomes soft and returns to its normal size.

Another physiological phenomenon which deserves attention in the study of the disorders under treatment, is *congestion*. We have seen in our note on blood circulation that after the blood passes through the arteries, it has to go through the capillaries. These blood vessels are extremely fine and are large enough just to allow the normal quantity of the blood to run through. If for any reason an abnormal quantity of the blood is attracted to a particular part of the body, the capillaries of that part become distended for the

Fig. L



The Ductus Deferens, Vesicula Seminalis
and
Prostate.
(Front walls of the left organs have been removed.)

passage of this additional quantity. An injury, irritation or repeated nerve stimulus draws unusually large quantities of blood to the parts injured, irritated or stimulated. If the operating agencies are temporary, the capillaries dilate for the time being, without causing any danger to the muscles or to the tissues through which they pass. But if the irritation or stimulation is constant or even repeated at quick intervals, the results are different. The distension tends to become chronic and the speed of the circulating blood begins to be slow. This state of dilated capillaries with the blood current delayed is called *congestion,* and shows retention of abnormal quantities of blood in the parts congested. Organs subjected to chronic congestion grow weaker and weaker as regards their function; and even a slight stimulus brings about highest functional activity.

Having noted these physiological facts, we are now in a position to understand why people suffer from premature ejaculations. Sexual excesses, either natural or unnatural, lead to the congestion of the sexual apparatus. Repeated sexual excitement without ultimate satisfaction is, perhaps, the worst agent causing congestion of the inner sexual organs. Unsatisfied passion maintains continuous excitement in the apparatus and causes sustained dilatation of the capillaries. The congested parts grow weaker and weaker in their function and the slightest sexual impulse induces strongest reaction.

Ejaculations under sexual excitement become possible only when the ejaculatory ducts open and allow the seminal fluid to be ejected. So long as the slit-like orifices of these ducts remain closed no emission is possible. Now if this very part of the reproductive organ is congested, its functional powers become weak and it readily responds to the slightest stimulus. Thus even a weak sexual impulse is sufficient to cause ejaculation. We have actually known a number of people who had so much damaged themselves that even a lustful thought immediately led to a seminal discharge.

Sexual excesses are equally responsible for feeble erections The muscle which by its contraction checks the venous blood flow and thus sustains erection, grows weaker and weaker being unduly strained. If it at all responds to the nerve stimulus, its contractions become feeble and do not last long. The result is that the inrush of blood under excitement speedily finds its way back through the dilated veins and the organ instantaneously becomes soft and flaccid again.

The unfortunate sufferer, in his alarm, approaches the so called experts who freely administer stimulants only to make their patients worse! The specifics sold in the market and secretly consumed in monds by the sexual wrecks, are a veritable curse upon the erring humanity and deserve to be discouraged by every sober soul. If at all an internal treatment is to be started an honourable member of the medical profession should be consulted We assure these weaklings, with all the earnestness we can command, that they will be ever safe in the hands of general physicians though, they do not pose to be specialists in matters sexual.

But we must confess that drugs, if at all they help, help the patient very little. Stimulants, indeed, induce a richer blood flow to the erectile structure; but the reaction of the impulse is quicker and the ejaculations tend to be more premature. Sedatives are better; but we have indicated the difficulties in the way of their use. If, however, the treatment with sedatives is carried over a long time, some beneficial results are sure to follow.

Our clinical experience has unmistakably shown us, however, that natural remedies are by far the most efficaious in this regard. Among others we have found that the Yogic exercises*, if intelligently prescribed, very largely relieve the sufferer. Sarvāṅgāsana is surely a great help. We are now in a position to see why.

---

* We do not propose to give here a complete code of the Yogic treatment of these disorders. That is not the purpose of this article. In what follows we shall explain how Sarvāṅgāsana helps to mitigate these troubles.

It is an admitted principle in the treatment of inflammation that the part inflamed should be elevated above the heart. Thus the elevated portion is drained of its surplus blood, the action being accelerated by the force of gravity. Now *inflammation* is only an aggravated form of *congestion*. And if elevation helps to relieve inflammation, it must help to relieve congestion also.

We have already studied (Y. M , Vol. I PP. 292-297) the beneficent effects of Sarvāṅgāsana on the venous blood circulation in general. We now see that the engorged vessels of the reproductive apparatus are elevated in this pose and are bound to be drained of their extra blood, if the pose is maintained for a sufficiently long time and the practice is daily kept up for a considerable period. When the congested part is relieved, from day to day, the distended capillaries slowly begin to contract; and after a few months' practice, the sexual functions begin to be nearer the normal.

Yes, a few months' practice. That is absolutely necessary. To our mind the choice lies between no cure and a delayed cure; and we believe every sane sufferer would choose the latter, as no better alternative is possible.

The muscle responsible for feeble erection can also be strengthened. The exercise of As'winī-Mudrā, already referred to on P. 132 of the first Vol., will be found to be of great service in this connection. Under excitement this muscle is kept in sustained contraction which impairs its strength. In this exercise the muscle is contracted and relaxed alternately and thus regains its original tone.*

As'winī-Mudrā can be advantageously practised during

---

* In the next issue we shall discuss the effects of the Pan-Physical Pose upon spontaneous emissions which are to be distinguished from premature ejaculations.

Sarvāṅgāsana, but only in the latter half of the time devoted to the pose daily.

We have seen great many cases of these disorders materially helped by these two exercises. Often they are required to be supplemented by other Yogic practices but this does not, in any way, detract anything from their merit. Because the other practices, at least most of them, are intended to make these exercises suit the general health of the sufferer; and the real relief comes mainly through these practices.*

---

* Absolute rest to the congested organs is an essential part of every treatment for congestion. It is necessary, therefore, that the sufferer should try to be free from any sexual activity while he is undergoing the treatment. The patient, if he believes in Yoga as a system of spiritual culture, is largely helped in securing this freedom from sexual perturbations, when he takes to Yogic remedies.

Miscellaneous

A FEW PRESS NOTICES.

THE BOMBAY CHRONICLE.

Bombay. 31 January, 1926.

With this fourth number the journal completes the first year of its useful career. The profusely illustrated articles embodying the original researches of the Kaivalyadhama on the physiological aspect of Yoga have been throughout interesting. The scientific spirit with which the work is being conducted is admirable. It will be a great service to Yogic science if the researches are carried on steadily.

The quarterly discusses the therapeutic value of Yogic physical culture very ably in its semi-scientific and popular sections. It entails great credit to the Yoga-Mimansa that in the course of one year it has succeeded greatly in popularising the Yogic Asanas or poses which are so helpful in maintaining good bodily health—the primary requisite to spiritual life. It certainly deserves the support of the reading public. [The second volume of the journal begins with the January number. The annual subscription is Rs. 7]

JAYA KARNĀTAKA.

Dharwar. 1 January, 1925.

This quarterly magazine is published by the Ās'rama Kaivalyadhāma of Lonavla. Shreemat Kuvalyānanda is trying to prove from his personal experiences that Yoga can stand the test of modern Western science. The various experiments and researches conducted by the Ās'rama are published in this magazine which is divided into four sections, namely, Scientific, Semi-Scientific, Popular and Miscellaneous. Photos of various Āsanas are being published in this magazine. In addition to this, several photos bearing on the scientific experiments are also published. This is the only magazine of its kind in our country. Many diseases can be cured by Āsanas and Prāṇāyāma. We recommend this magazine to the doctors and request them to determine how far Yogic culture can be utilized to alleviate the miseries of the suffering humanity. As the popular section will be of great use to the general public, they will do well to subscribe to the journal.

THE JOURNAL OF AYURVEDA.

Calcutta. January, 1926.

It happens very seldom to have a new journal out of the common track: and the one under review is such a treat. The Journal which is a quarterly publication was started a little more than a year ago and the October, 1925 issue completes the first volume. The object of the journal, which is full of novel and interesting subject matter from the beginning to the end, is to record scientific researches in physiology, spiritual and physical culture, etc, with their practical application to therapeutics. We are quite proud to emphasise the fact that the Swamiji has fully succeeded in his mission. The magazine is for every body as the "Yoga System," which is considered as mainly spiritual, is based on a perfect system of applied therapeutics and physical exercises, which can only bless the acquirer with a mentality of unflinching spirituality. The various poses and practices of "Hatha Yoga" with their utility in curing different diseases have been well described and illustrated with excellently done-up half-tone photographs. We wish the Journal every success and congratulate Srimat Kuvalayanandji for his laudable attempts to teach the people. The Vol. 1, consisting of 4 issues can be had on payment of Rs. 7/- only post free till the end of February 1926, (thereafter Rs. 9/-) which is ridiculously cheap, considering the matter contained in it and we trust that none interested in Yoga philosophy with its relationship to therapeutics and physical culture should miss it.

The following is a letter from a young man who suffered from appendicitis and was subsequently cured of it by Yogic practices. We are reproducing it in his own words.—

APPENDICITIS CURED

Poona. 15 January, 1926.

It was in September 1924 that one morning quite of a sudden I felt a pin-pricking pain repeatedly in the right side of the abdomen. I thought it to be ordinary and casual and as such I first neglected it. But when the pain did not subside even after a week I approached a well-known physician who plainly told me that he could not diagnose the case and it was better if I had taken santonine. Santonine was to no effect and then the doctor advised me to wait patiently and see (?) so that if the pain was casual it would subside and if it did not stop operation or such other necessary step might be taken. In telling me this the doctor with philosophic calm assured me that I would not lose in any case. I waited accordingly for two months with proper regard to light diet and exercise, yet the pain would not subside. Then I consulted another physician who was able to say that it was chronic appendicitis and until it developed he would not advise anything but regular diet and exercise. Then I consulted a surgeon who assured me that there was nothing very serious and that I might not worry about it. But how was that possible when all the while I was suffering ? However, he consoled (!) me that if there was any serious development he would take me "to the table." So, trusting in Fate and believing in God, I tried to bear the pain and wait.

But as Fortune and Luck would have it, I could see and consult Shreemat Kuvalayananda who taught me some poses and wonder of it was that by regularly practising them I have completely cured myself of the pain. Not only that, but I have added enormously to my vitality and have increased my capacity both mental and physical.

After 15 days of Yogic practice I could see an appreciable change for the better and two months later I did not even remember that I had suffered abdominal pain ! The colour and form of excretion changed; and by the by, let me say that the number of "nocturnal discharges" lessened!

With the experience of benefits derivable by these poses I propose to advocate strongly the utility of these practices of Hatha Yoga without disrespecting medical and surgical sciences of the day.

OUR LIST OF EXCHANGES.

(BROUGHT UP TO DATE)

Indian.

JOURNAL OF THE BOMBAY BRANCH OF THE ROYAL ASIATIC SOCIETY, *Royal Asiatic Society, Bombay.*

ANNALS OF THE BHANDARKAR INSTITUTE, *Bhandarkar Oriental Research Institute, (Poona City).*

EPIGRAPHIA INDO-MOSLEMICA, *Nizam's Archaeological Department, Hyderabad (Deccan).*

VISHVA-BHARATI, *Shantiniketana, Bolpur.*

INDIAN MEDICAL RECORD, (*A monthly Journal of Public Health and Tropical Medicines); Messrs. Bridge & Sons, 2 Horokumar, Tagore Square. Corporation St., East Calcutta.*

THE MODERN REVIEW, *91, Upper Circular Road, Calcutta.*

WELFARE, *91, Upper Circular Road, Calcutta*

THE VEDIC MAGAZINE AND GURUKUL SAMACHAR, *Gurudatta Bhawan, Lahore.*

CURRENT THOUGHT, *S Ganesan, Triplicane, Madras.*

THE THEOSOPHIST, *The Theosophical Publishing House, Adyar, Madras.*

THE QUARTERLY JOURNAL OF THE MYTHIC SOCIETY, *The General Secretary, Mythic Society, Bengalore.*

THE KALPAKA, *Tinnevelly, (S. India).*

PRABUDDHA BHARAT, *Adwaita Ashrama, Mayavati, P. O., Almora Dist.*

BURMA PROGRESS, *Rangoon.*

VIVIDHADNYANAVISTARA AND MAHARASHTRA SAHITYA PATRIKA, *Indu-Bhuwan, Thakurdwar, Bombay.*

TILAK MAHAVIDYALAYA QUARTERLY, *Tilak Mahavidyalaya Near, 'Khajeena well', Poona (city).*

TATWADNYAN-MANDIR, *Indian Institute of Philosophy, Amalner, Dist, East Khandesh.*

CHITRAMAYA-JAGAT, *Chitrashala Press, Sadashiv Peth, House No. 1026, Poona (city).*

VAIDIC-DHARMA, *Bharat Mudranalaya. Swadhyaya Mandal, Aundh, Dist. Satara.*

PURUSHARTHA, *Bharat Mudranalaya, Swadhyaya Mandal, Aundh Dist. Satara.*

BHISHAGVILAS, *Court Galli, Ahmednagar.*

JAYAKARNATAK, *Dharwar.*

PREMA, *Premayatana Ashrama, Tungabhadra, (M. S. M. Ry.).*

PRABARTAK, *Calcutta.*

PURATATVA, *Gujrat Puratatva Mandir, Ahmedabad.*

THE UNION MAGAZINE, *D. A. V. College, Lahore.*

THE PHILOSOPHICAL QUARTERLY, *Indian Institute of Philosophy, Amalner, East Khandesh.*

SWAYAMSEVAK, *Fonda, Goa.*

THE ADVERTISER, *Baroda.*

THE BOMBAY CHRONICLE, *Medows Street, Fort, Bombay.*

THE INDIAN SOCIAL REFORMER, *Navasari Chambers, Outram Road, Fort, Bombay.*

MAHRATTA, *Gaikwad Wada, Narayan Peth, House No. 568, Poona (city).*

THE MYSORE CHRONICLE, *Caxton Press. Bangalore (city).*

KESARI, *Narayan Peth, House No. 568, Poona (city).*

MAHARASHTRA, *Fadnispura, House No. 100, Circle No, 7, Nagpur (city).*

NAVAKALA, *Girgaum Road, House No. 328, Bombay.*

SWARAJYA *Shukrawar Peth, House No. 6, Poona (city).*

DNYANAPRAKASHA, *Budhwar Peth, Poona (city).*

MAHARASHTRA-DHARMA, *Satyagraha Ashrama, Wardha.*

PRABODHA, *lane No. 1 House No. 5, Dhulia.*

THE JAIN GAZETTE, *9 Ammen Koil Street, George Town, Madras.*

PROGRESS OF EDUCATION, *C/o the Aryabhushan Press, Poona.*

THE INDIAN DAILY MAIL, *Dalal Street, Fort, Bombay.*

JOURNAL OF INDIAN HISTORY, *Shri Venkatesh Vilas, Nadu Street, Mailapur, Madras.*

ALANKARA, GURUKUL VIDYALAYA, *P. O. Gurukul-Kangri Dist., Bijnore.*

Foreign.

GOOD HEALTH, *The Battle Creek Journal of Health and Hygiene, the Goodhealth Publishing Co, Battle-creek, Michigan. U. S. A.*

THE QUEST, *S. Kensigtou, S. W. 7, London.*

THE OCCULT REVIEW, *William Rider & Sons, Ltd., Cathedral House, Paternoster Row, London, E. C. 4.*

THE JOURNAL OF THE ROYAL SANITARY INSTITUTE, *90 Buckingham Palace Road, S. W. 1, London.*

THE OPEN COURT, *The Open Court Publishing Company, 122, South Michigan Avenue, Chicago, U. S. A.*

THE MONIST, *The Open Court Publishing Company 122, South Michigan Avenue, Chicago, U. S. A.*

The Lindlahr Magazine of RADIANT HEALTH, *The Lindlahr Publishing Company, 525 South Ashland, Blvd., Chicago, U. S. A.*

NATUROPATH, *formerly Herald of Health, Dr. Benedict Lust, West 76th, Street, New York, N. Y.*

THE EASTERN BUDHIST, *The Eastern Budhist Society, Kyoto, Japan.*

THE NEW ORIENT, *New York City, U. S. A.*

NATURE'S PATH, *7 West 76th Street, New York, NY.*

तदेकोऽवशिष्टः शिवः केवलोऽहम् ।
I alone persist: Blissful: Absolute.

ॐ

सोऽहम् ।

Yoga-Mīmāṅsā

EDITED BY

S'RĪMAT KUVALAYĀNANDA

(J. G. Gune)

April, 1926

Vol. II **No. 2**

KAIVALYADHĀMA

Post-Lonavla

(Bombay, India.)

सर्वं खल्विदं ब्रह्म ।
All this is, indeed, Brahman.

नेह नानास्ति किञ्चन ।
There is nothing here apart from it.

शरीरमाद्यं खलु धर्मसाधनम् ।
Surely Health is the primary requisite of spiritual life.

[*All rights reserved.*]

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& published by Kuvalayānanda (J. G. Guṇe), at Kuñjavana (904 Valvana), Lonavla.

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LXXVI Bhujaṅgāsana or The Cobra Pose.
LXXVII Halāsana or The Plough Pose.
LXXVIII The Embryo.

ॐ

तदेकोऽवशिष्टः शिवः केवलोऽहम् ।

सोऽहम् ।

YOGA-MĪMĀṄSĀ

VOL. II APRIL, 1926 NO. 2

Editorial Notes

MAY the Maker of all make this journal a success. Blessed is the name of the Lord. May He bless the workers of the Ās'rama with a happy and prosperous career as servants of the world which is only the Lord Himself objectified. May He, that has created us in His infinite wisdom, lead us to the light that is beyond all darkness.

* * *

THE publication of this number has again been criminally delayed. In the circular letters addressed to our subscribers, we have made the whole position clear, and we do not wish to repeat the same thing here. We only wish that we would be able to make up the loss of time. Our sincere request to our subscribers is that they will not much mind our irregularities in the publication of this journal and will continue to show their sympathy in spite of our drawbacks.

* * *

THIS number contains additional blood pressure experiments. These along with those published in the last issue, give us tolerably sufficient material to draw our conclusions, because we want only to note the fluctuations in blood pressure during some of the Yogic poses that are likely to disturb the circulatory system to a large extent. The original records have been worked up and tables are given in a form that would enable our readers to follow our article on 'Yogic Poses and Blood Pressure' easily. This article is meant both for men of science and the laity, but more for the latter than for the former who are requested to draw their own conclusions from the figures presented to them. Next comes 'A Note on the Ductless Glands'. Upto now we have said a lot of things about these glands in the pages of our journal. But a systematic statement of their anatomy and general physiology was not attempted for the layman. So we thought it desirable to have this short description here. Apart from the therapeutical, there is purely a physical culture side to Yoga. The article 'Some Practices for Increasing Stature' has been written from this point of view. The one appreciation reproduced in the Miscellaneous Section is perhaps the best that has upto now appeared in the press, not because it has nothing but praise for our work, but because it very correctly represents our view point which very few testimonials had done heretofore.

* * *

THE special feature of the activities of the Ās'rama, during the last six months, is the active sympathy of a few Indian states it has succeeded in enlisting. It has never been our custom to make in the pages of the Yoga-Mīmāṅsā statements* of the exact amounts donated to us by different individuals. Nor are we going to make any change in this regard in the case of states. Only in those instances where a whole department of the Ās'rama is named after a particular person in recognition of the help received, the amounts donated would be referred to.

* * *

THE first state that called us for lecture on the theme we are developing in this journal, was Cambay. The prince being a minor, the state is under an administration. Mr. V. K. Namjoshi, the administrator, is anxious for the material and moral progress of the people entrusted to his care He thought our lecture would help them in this regard. Hence the invitation. A small amount was donated to the Ās'rama on behalf of the state and Mr. Namjoshi also hopes to do something for us hereafter. Privately from his own funds Mr. Namjoshi has given us a substantial help for our publication department. His passion for Yoga is tremendous.

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* A list of our donations will appear from time to time in the reports issued by the Ās'rama.

* * *

THE other three states to which we were invited are situated in Kathiawar. They are Limdi, Bhavnagar and Porbandar.

* * *

LIMDI is a small state, but its ruler has a large heart. His Highness the Thakorsaheb possesses all the virtues characteristic of a Rājarshi. He is a soldier and a saint! His hankering for spiritual culture is boundless. His devotion to the Lord is overwhelming. His Highness is fortunate enough to secure a personal secretary that shares his sentiments and cherishes his ideals in full. Miss Elizabeth Sharpe who is the superintendent of female education in the state as well as the personal secretary to H. H. the Thakorsaheb, is not only a philosopher, but is already an advanced student of Yoga, on its spiritual side. Her treatise on the Bhagavadgītā is a valuable contribution to philosophical thought. It was at the recommendation of this sister that we were invited by His Highness to Limdi. After several sittings and demonstrations for a couple of days, H. H. the Thakorsaheb extended his patronage to the Ās'rama and has graciously undertaken to help us from time to time. It was at Limdi that we were introduced to H. H. the Maharaja Ranasaheb of Porbandar who immediately invited us to go to his capital for a lecture.

* * *

IN the meantime, we already had had a call from Bhavnagar, the centre of the Kathiawar culture. A reference to

Sir Prabhās'ankara Pattani's deep sympathy for the Ās'rama has already appeared in the 4th Number of Vol. I. This venerated servant of Mother India is the chairman of the council of administration. The prince is yet a minor. We found Sir Prabh'āsankara a veritable Karma Yogin! His daily programme is overcrowded. He is preoccupied from week to week. But in spite of his declining health and heavy responsibilities, Sir Prabhās'ankara is so generous in spending time for outsiders. A lecture was delivered under Sirsaheb's presidentship before a picked audience consisting of educated citizens of all professions. In return a donation for the Ās'rama was sent us by the state.

* * *

NEXT came the turn of Porbandar. Its ruler H. H. the Maharaja Ranasaheb is quite a young prince in the prime of his life. But the unassuming dignity of his personality and the deep serenity of his temper have all a charm of their own. H. H. the Maharaja Ranasaheb is a worthy representative of the ancient Kshatriyas and has inherited all their virtues. Inwardly intensly religious, he is outwardly a worshipper of *æsthetics*, one of the many aspects in which the Lord manifests Himself. Ancient Saṅskrita works like Lalitāsahasranāma* and Saundaryalaharī† emphasise this very aspect of the Lord. As a consequence æsthetics is very much in evidence everywhere in Porbandar. The houses, the streets, the playgrounds, the docks, all are simply picturesque and everywhere nothing but beauty reigns supreme!

H. H. the Maharaja Ranasaheb is anxious to modernise the ancient culture. That is why he liked our work so much. After a lecture at the club house, under H. H. the Maharaja Ranasaheb's presidency, a discussion and a demonstration were arranged at the palace. The chief medical officer, a sound scholar with a distinguished foreign career, took principal part in the discussion.

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* A Thousand Names of the Beautiful.

† Surging Emotions Roused by The Beautiful.

AS a result of all this, H. H. the Maharaja Ranasaheb was pleased to give the Ās'rama a monthly grant amounting to Rs. 3,000 per year for the next ten years to come. As a humble token of gratitude for this liberal grant, we sent in a pressing request to be allowed to associate the name of His Highness with our clinical laboratory and we are glad to state that His Highness has allowed us this proud privilege, though by nature H. H. the Maharaja Ranasaheb dislikes all show and publicity.

* * *

EVERYWHERE we were treated with exceptional sympathy. We offer our respectful thanks to all the worthy personages referred to above, not only for what they have done to support the Ās'rama, but also for the overwhelming kindness they showed to our own person.

* * *

THE clinical laboratory of the Ās'rama is now thrown open to the general public. Already the medical institutions in and about Lonavla are taking advantage of the arrangements available at the Ās'rama. As we proceed we wish to make this laboratory quite an ideal institution worthy of the great name with which it is so generously allowed to be associated.

* * *

BEFORE we close we wish to draw our readers' attention to the rules and regulations for students seeking admission to the Ās'rama. They are printed on the following few pages to attract special notice. We also recommend for their consideration the announcement of the Rugṇa Sevā Mandira published in the Miscellaneous Section.

* * *

OUR next issue will contain detailed instructions for practising Dhauti, an important Yogic practice for the stomach.

RANA NATAVARSINGH CLINICAL LABORATORY

THIS laboratory will start its work formally, under its new name, on the 16th of October coming, that being an auspicious day of the Āryan calendar. Informally it has already been working. The equipment is such as would do credit to any ordinary hospital. But our aim is to make it ideal. Had it not been for some technical difficulties, our arrangements would have been much more complete by this time We are trying to overcome these difficulties and hope soon to be adding substantially to our present equipment.

IN this laboratory *all clinical examination* is offered *free of charge* to indoor and outdoor patients of the Ās'rama. Even to outsiders all examination is given *gratis*. It is not binding upon patients presenting themselves for examination from outside to follow the Yogic treatment. They are free to place themselves under any medical man for whatever treatment they like

FOLLOWING are the hours of attendance —

8 A. M. to 11 A. M. 4 P. M. to 5 P. M.

N. B.—Work during extra hours will be done only for very urgent cases.

HIS HIGHNESS THE MAHARAJA RANA SAHEB
NATAVARSINGHAJI BAHADUR
of
PORBANDAR.

THE CLINICAL LABORATORY OF THE ĀS'RAMA

will be called

from the coming Vijayādas'ami

Rana Natavarsingh Clinical Laboratory

as a humble token of gratitude

for

H. H. The Maharaja Ranasaheb's

Liberal Patronage to the Ās'rama

# RULES AND REGULATIONS
for
ADMISSION OF STUDENTS TO THE ĀS'RAMA

General

1 No one will be admitted as a student to the Ās'rama that does not come to it for spiritual evolution.

2 A studentship is available at the Ās'rama only to those who look upon Yoga as a means to self-realisation.

3 No male* below the age of puberty and no female* of whatever description will be admitted to the Ās'rama as a student.

4 Moral excellence is an absolutely necessary qualification for being admitted to a studentship in the Ās'rama.

5 No one that is suffering from a serious defect in his body or brain will be admitted to the Ās'rama as a student.

6 Students who are still under the guardianship of an elderly person shall not be admitted to the Ās'rama without the consent of their guardians.

7 Admission as students will be granted only to those who are either known to some one of the present inmates of the Ās'rama, or to those who can produce satisfactory references from some respectable person of their place.

8 A probationary period of two to six months according to the discretion of the Director, is compulsory for everyone before he is confirmed in his studentship.

9 Students when admitted will have to obey the discipline of the Ās'rama in every detail.

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* Howsoever anxious we may be to provide for the Yogic instruction of both these classes of candidates, our present circumstances put the thing practically out of the question.

10 Even a day's absence without leave from the Ās'rama will be considered a serious breach of discipline.

11 This or any other serious breach of discipline will entail an immediate expulsion from the Ās'rama.

12 There are three types of studentships instituted in the Ās'rama: (1) Short Period Paying Studentships; (2) Short Period Working Studentships; (3) Permanent Studentships.*

13 No student falling under any of these categories will be charged any fees for Yogic instruction which will ever be given absolutely gratis.

14 Persons losing their studentship not for any serious breach of discipline, are not precluded from applying for a studentship again.

15 First two types of studentships are available even to married persons provided they undertake to follow the Yogic code of sex morality. The last type is open to celibates only.

Short Period Paying Studentships

16 Any one that satisfies the general conditions and undertakes to pay 35 rupees in advance every month for his actual expenses, will be admitted to the Ās'rama for a Short Period Paying Studentship. The Director, however, reserves to himself the right of refusing admission to candidates and is not bound to explain reasons for such a refusal.

17 Short Period Paying Studentships are available for a minimum period of six months and a maximum period of six years only.

18 Should a candidate wish to stay in the Ās'rama for a period less than six months or more than six years, he should do so either as a Visitor or as a Permanent Student respectively.

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* Another type of permanent studentship is yet to be instituted, rules and regulations concerning which will be published later on.

19 Not more than two months' leave will be granted to a student in a year, every time absence being allowed strictly on grounds of emergency.

Short Period Working Studentships

20 Candidates that satisfy the general conditions but are not in a position to pay or being in a position do not wish to do so, may be given Short Period Working Studentships in the Ās'rama, provided they undertake to do such work in the Ās'rama as may be assigned to them from time to time by the Director or in the absence of the Director by his representative.

21 The character and amount of work will be such as will not interfere with the Yogic practices of such students. But in times of emergency they are expected voluntarily to look to the interest of the Ās'rama even at some sacrifice of their Yogic studies, such additional work being sure to help them in their spiritual evolution.

22 Candidates to be admitted to this class must not only be very sound in body and mind, but must possess intense hankering for spiritual evolution through Yogic life.

23 No candidate will get a Working Studentship at the Ās'rama if he has completed his thirtieth year. The younger the candidate the more preferable he will be.

24 No candidate that has directly to shoulder any family responsibilities will be admitted to this class of studentship.

25 The Ās'rama will be responsible not only for the boarding and lodging of the working students during their stay at the Ās'rama, but also for the satisfaction of their ordinary wants as students of Yoga. Should a student, however, incur expenses even in the performance of his legitimate duties in other capacities, he should make his own arrangements to defray them.

26 Not more than one month's leave will be granted to a student in a year, every time absence being allowed strictly on grounds of emergency.

27 Working Studentships are available only for a minimum period of four years.

28 Students of this class must offer themselves as subjects for any Yogic experimentation that may be conducted on behalf of the Ās'rama.

Permanent Studentships

29 Permanent Studentships are available only to those that want to make Yoga their life work, completely identifying themselves with the Ās'rama and its activities in the Yogic field.

30 Only those celibates that are from sixteen to twenty years of age and that have full confidence in their capacity to continue their chaste celibacy to the thirty-sixth year of their life, will be admitted to this class.

31 Any family tie that would disturb an exclusive Yogic life will constitute a disqualification for a candidate of this class.

32 Permanent Studentships will be available only to those that have a special aptitude for Yogic culture.

33 The Ās'rama undertakes to satisfy all legitimate needs of a permanent student while he is attached to the Ās'rama.

34 After reaching a particular level of spiritual evolution, a permanent student will be admitted to a certain type of membership* in the Ās'rama, securing for him economic independence within the limits of the Ās'rama itself.

35 After the completion of his thirty-sixth year, a permanent student is free to choose whatever walk of life he likes.

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* This is yet to be instituted, but a rough idea about it can be had from the Director even now. It will carry with it certain rights giving the member a vote in the management of his particular department.

The Scientific Section

SYSTEM OF TRANSLITERATION

Letters, their sounds and a description of these sounds :—

अ	A	Pronounce	'A'	like	'u'	in	'but'.
आ	Ā	„	'Ā'	„	'a'	„	'far'.
इ	İ	„	'İ'	„	'i'	„	'pin'.
ई	Ī	„	'Ī'	„	'ee'	„	'feel'.
उ	U	„	'U'	„	'u'	„	'fulsome'.
ऊ	Ū	„	'Ū'	„	'oo'	„	'wool'.
ऋ	Ṛi	„	'Ṛi'	„	'rö'	„	German.
ॠ	Ṝi	„	'Ṝi'	„	„	„	„ with a strong accent.
ऌ	Ḷi	„	'Ḷi'	„	'lö'	„	German.
ए	E	„	'E'	„	'a'	„	'fate'.
ऐ	AĪ	„	'AĪ'	„	'ai'	„	'aisle' but not drawled out.
ओ	O	„	'O'	„	'o'	„	'over'.
औ	AU	„	'AU'	„	'ou'	„	'ounce' but not drawled out.
क	KA	„	'K'	„	'k'	„	'kill'.
ख	KHA	„	'KH'	„	'kh'	„	'ink-horn' or like 'ch' in 'Loch' (Scottish).
ग	GA	„	'G'	„	'g'	„	'girl'.
घ	GHA	„	'GH'	„	'gh'	„	'log-house' or 'ghee'.
ङ	N̄A	„	'N̄'	„	'n'	„	'king' or 'link'.
च	CHA	„	'CH'	„	'ch'	„	'church'.
छ	CHHA	„	'CHH'	„	the second 'ch' in 'churchill'.		
ज	JA	„	'J'	„	'j'	in	'join'.
झ	JHA	„	'JH'	„	palatal 'z' as in 'azure'.		
ञ	N'A	„	'N''	„	'n'	in	'pinch'.
ट	ṬA	„	'Ṭ'	„	't'	„	'tub'.
ठ	ṬHA	„	'ṬH'	„	'th'	„	'pot-house'.

SYSTEM OF TRANSLITERATION

Letters, their sounds, and a description of these sounds:—

ड	ḌA	Pronounce	‘Ḍ’	like	‘d’	in	‘dog’.
ढ	ḌHA	„	‘ḌH’	„	‘dh’	„	‘mad-house’.
ण	ṆA	„	‘Ṇ’	„	‘n’	„	‘splinter’ or ‘and’.
त	TA	„	‘T’	like	dental ‘t’	as in	‘thin’, or like the French ‘T’.
थ	THA	„	‘TH’	„	‘th’	in	‘thunder’.
द	DA	„	‘D’	„	‘th’	„	‘then’.
ध	DHA	„	‘DH’	„	‘th’	„	‘this’.
न	NA	„	‘N’	„	‘n’	„	‘no’.
प	PA	„	‘P’	„	‘p’	„	‘paw’.
फ	PHA	„	‘PH’	„	‘ph’	„	‘top-heavy’, or ‘gh’ in ‘laugh’.
ब	BA	„	‘B’	„	‘b’	„	‘balm’.
भ	BHA	„	‘BH’	„	‘bh’	„	‘hob-house’.
म	MA	„	‘M’	„	‘m’	„	‘mat’.
य	YA	„	‘Y’	„	‘y’	„	‘yawn’.
र	RA	„	‘R’	„	‘r’	„	‘rub’.
ल	LA	„	‘L’	„	‘l’	„	‘lo’.
व	VA	„	‘V’	„	‘w’	„	‘wane’.
श	S’A	„	‘S’’	„	‘sh’	„	‘ashes’.
ष	SHA	„	‘SH’	„	a strong lingual with rounded lips.		
स	SA	„	‘S’	„	‘s’	in	‘sun’.
ह	HA	„	‘H’	„	‘h’	„	‘hum’.
ळ	ḶA	A dento-lingual pronounced with a little rounding of lips.					

Visarga—Ḥ; Nasalized म् as in संयम—ṁ;

Nasalized न् as in मीमांसा—ṅ.

BLOOD PRESSURE EXPERIMENTS

on

S'ĪRSHĀSANA

In our last issue we published our records of blood pressure experiments on Sarvāṅgāsana and Mātsyāsana. In this issue we give the results of our experiments on S'īrshāsana. [Fig. LI.] In conducting these experiments the same subjects and instruments were used as in our previous work, the same auscultation method being followed in recording the different pressures. These researches were undertaken immediately after those published in the last number. Hence the record of pressures in standing and lying down positions given in the previous issue, is useful in studying the results stated in this section.

S'īrshāsana practised without any support for the hoisted legs requires strong contraction of the muscles of the arms, almost effacing the normal arterial blood flow at the bend of the elbow. In order to minimise this inconvenient influence, the subjects were made to practice S'īrshāsana against a wall, their legs, or better their heels, very very gently resting upon it. In studying the following records this fact may be taken into account.

We have, however, to bring it to the notice of our critical readers, that muscular effort necessary for S'īrshāsana being practised against a wall is much more than that required for its unaided practice. A beginner may require a larger expenditure of muscle energy for the unaided practice of S'īrshāsana, but once a man gets mastery over the pose, standing on the head needs almost as much muscle work as standing on the legs.

As before diagrammatical representations of the rise and fall in blood pressure have been given after the tabulated figures.

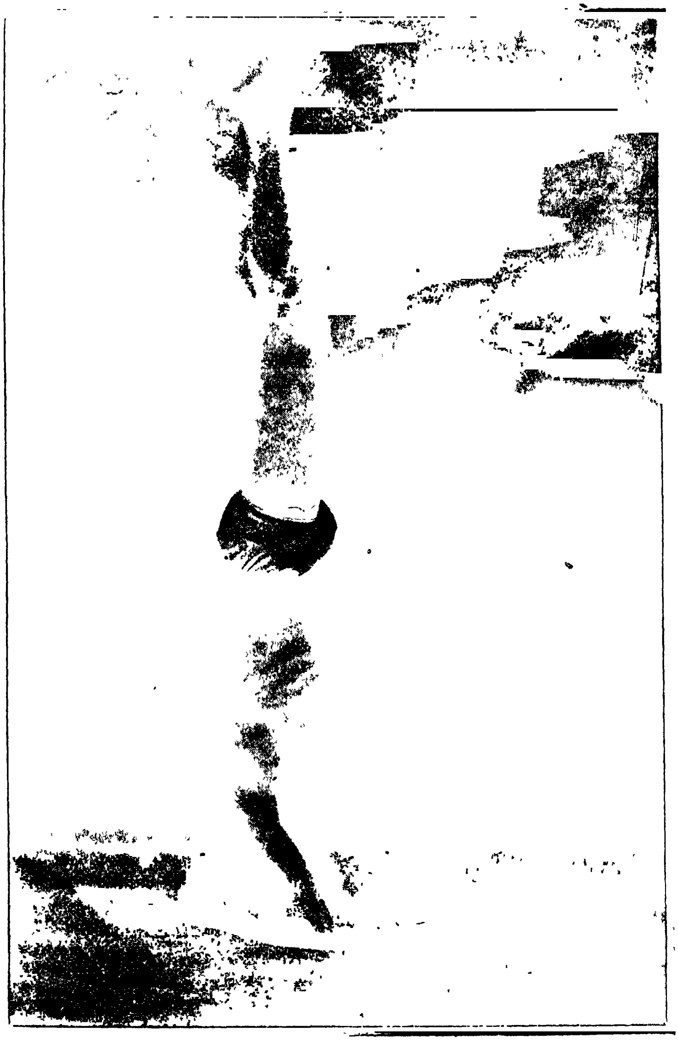
Average blood pressures of this and the two previous Āsanas, along with some other noteworthy points, are given in the next article. With a view to facilitate comparision, the averages of blood pressures in standing and lying down positions have also been worked out and tabulated in the following article.

Our conclusions based on these records are included in an article in the next section.

BLOOD PRESSURE IN S'ĪRSHĀSANA

Subjects	Normal in Sitting	
	S.	D.
A	113 mm. Hg.	90 mm. Hg.
B	122 „	94 „
C	134 „	100 „
E	120 „	80 „
F	130 „	100 „
G	144 „	85 „
H	125 „	86 „
I	136 „	104 „
J	115 „	90 „
K	114 „	86 „

Fig. LI



S'īrshāsana.

BLOOD PRESSURE IN S'ĪRSHĀSANA

Subjects	Initial	
	S.	D.
A	142 mm. Hg	102 mm. Hg.
B	150 „	110 „
C	146 „	106 „
E	134 „	98 „
F	128 „	90 „
G	148 „	104 „
H	125 „	98 „
I	138 „	100 „
J	114 „	94 „
K	136 „	102 „

BLOOD PRESSURE IN S'ĪRSHĀSANA

Subjects	End of 1st m.	
	S.	D.
A	142 mm. Hg.	104 mm. Hg.
B	150 ,,	112 ,,
C	148 ,,	110 ,,
E	134 ,,	98 ,,
F	140 ,,	110 ,,
G	154 ,,	124 ,,
H	124 ,,	100 ,,
I	128 ,,	98 ,,
J	122 ,,	98 ,,
K	134 ,,	108 ,,

BLOOD PRESSURE IN S'ĪRSHĀSANA

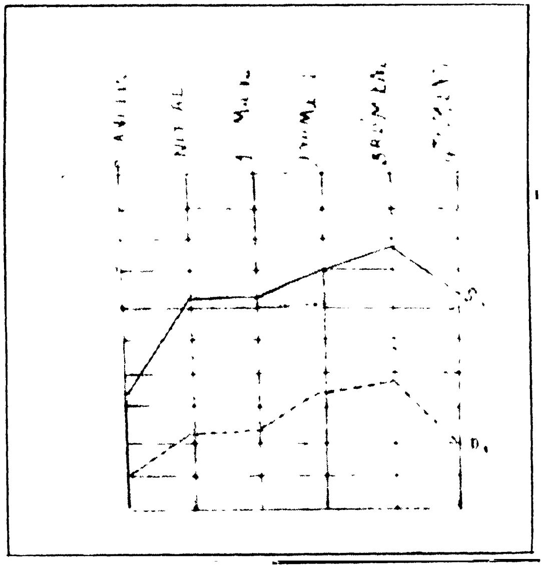
End of 2nd m.		End of 3rd m.	
S.	D.	S.	D.
150 mm Hg.	114 mm Hg.	158 mm. Hg	118 mm. Hg.
152 ,,	106 ,,	138 ,,	100 ,,
152 ,,	130 ,,	No	Pulse
130 ,,	100 ,,	132 mm. Hg.	98 mm. Hg.
144 ,,	116 ,,	No	Pulse
160 ,,	130 ,,	,,	,,
123 ,,	101 ,,	120 mm. Hg.	102 mm. Hg.
129 ,,	102 ,,	129 ,,	102 ,,
124 ,,	100 ,,	124 ,,	102 ,,
138 ,,	110 ,,	136 ,,	110 ,,

BLOOD PRESSURE IN S'ĪRSHĀSANA

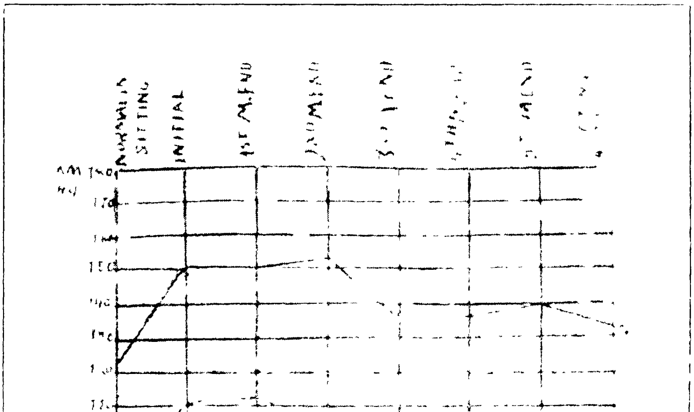
Subjects	End of 4th m.	
	S.	D.
A	No	Pulse
B	138 mm. Hg.	104 mm. Hg.
C	No	Pulse
E	132 mm. Hg.	104 mm. Hg.
F	No	Pulse
G	,,	,,
H	120 mm. Hg.	100 mm. Hg.
I	130 ,,	103 ,,
J	126 ,,	102 ,,
K	134 ,,	112 ,,

Blood Pressure in S'īrshāsana

Subject—**A** Fig. **LII**



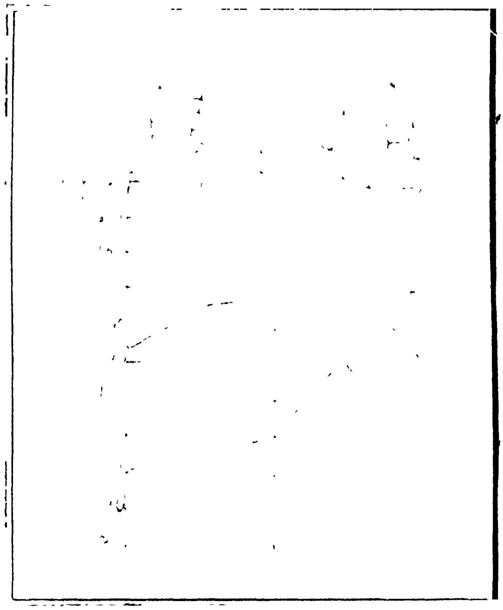
Subject—**B** Fig. **LIII**



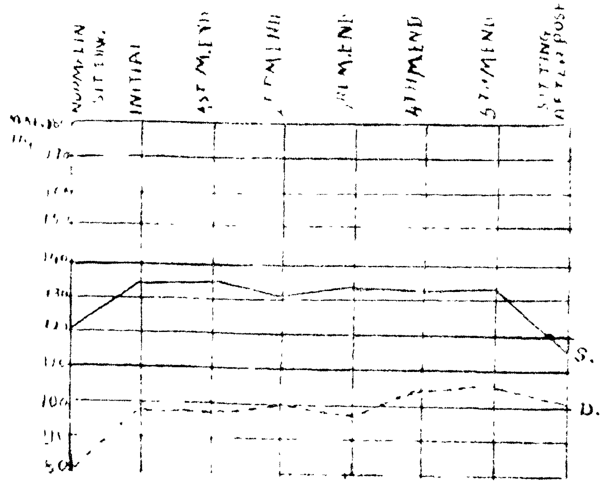
In these and following diagrammatic representations Ordinates = mm. Hg.; Abscissa = time in minutes; S. = Systolic and D. = Diastolic.

Blood Pressure in S'irshasana

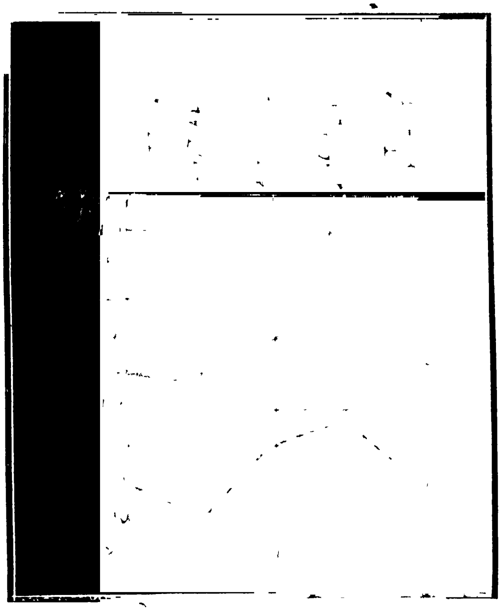
Subject—C **Fig. LIV**



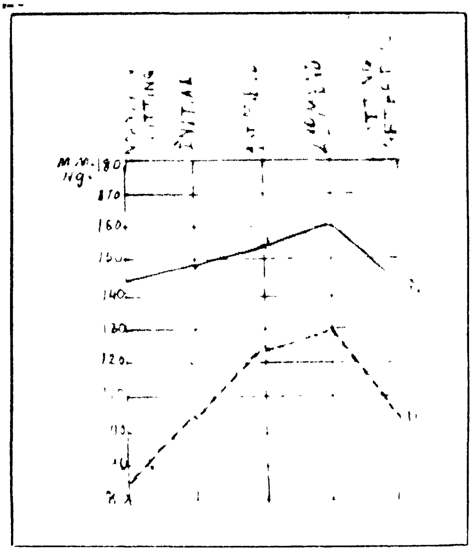
Subject—E **Fig. LV**



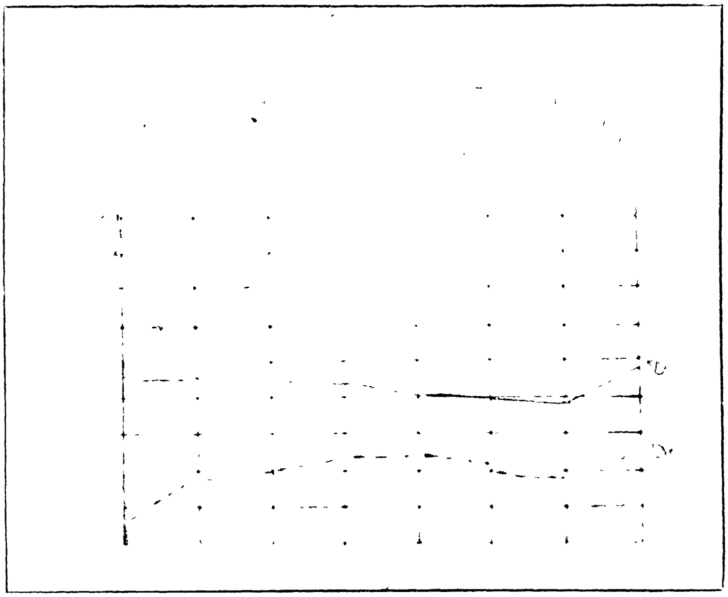
Subject—**F** Fig. **LVI**



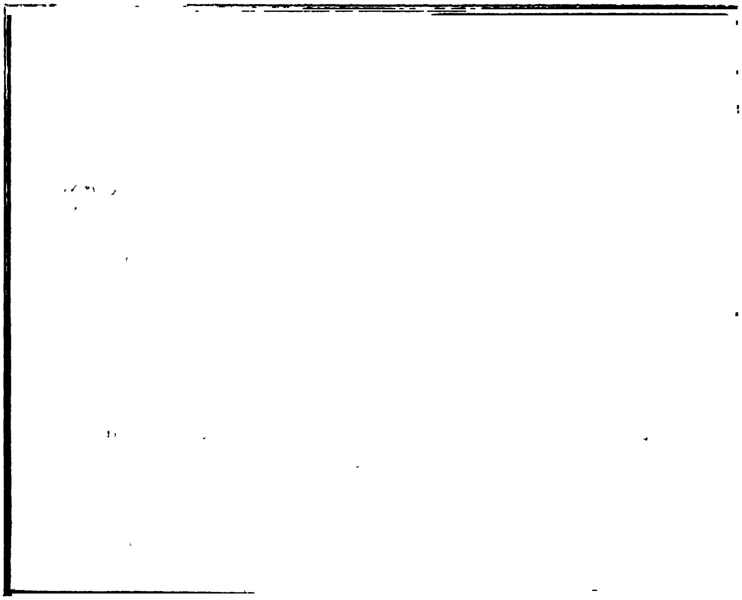
Subject—**G** Fig. **LVII**



Subject—H **Fig. LVIII**

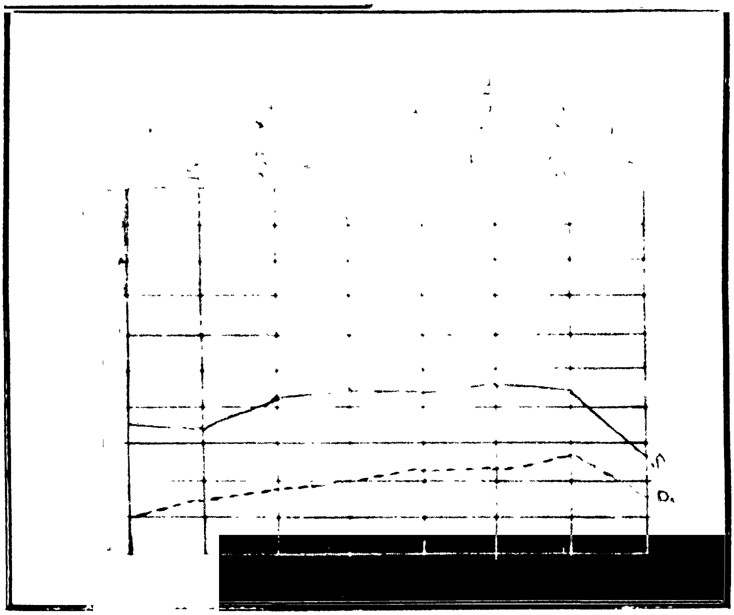


Subject—I **Fig. LIX**



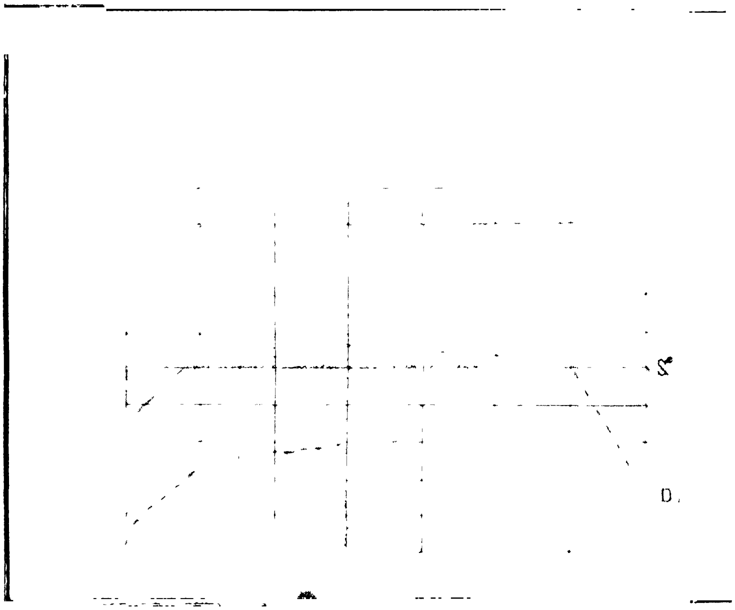
Blood Pressure in S'īrshāsana

Subject—**J** Fig. **LX**



[redacted]

Subject—**K** Fig. **LXI**



BLOOD PRESSURE IN S'ĪRSHĀSANA

End of 5th m.		After the Pose in Sitting	
S.	D.	S.	D.
No	Pulse	144 mm Hg.	100 mm. Hg.
140 mm. Hg.	104 mm. Hg.	134 "	92 "
No	Pulse	134 "	105 "
132 mm. Hg.	106 mm. Hg.	118 "	100 "
No	Pulse	134 "	100 "
"	"	144 "	105 "
119 mm. Hg.	98 mm. Hg.	128 "	104 "
130 "	102 "	140 "	102 "
124 "	106 "	108 "	96 "
140 "	130 "	130 "	98 "

A FEW MORE FIGURES OF BLOOD PRESSURE

THE figures of blood pressure given in the last issue as well as in the last article of this issue, are marshalled as they were recorded during the experiments. In this article the same material has been worked up and tabulated in order to present it in such a form as would make the conclusions based upon it readily intelligible.

Figures of pulse pressure were not given upto now. Nor are they given in this article. An attempt is made, however, to ascertain the average pulse pressure of the eleven subjects during every Āsana at every minute of its course. The results are given on P. 105. An examination of these figures will show that the pulse pressure has a tendency to fall as the pose continues except in the case of Sarvāṅgāsana where it steadily rises. There is a sudden rise just after the pose.

The next four tables, with a view to make comparison effective, give, side by side, the normal systolic pressures and the maximum attained by each subject during the pose. For the same reason systolic pressure just after the pose has also been given against the two figures. Figures of pulse pressure have been similarly dealt with.

In order to compare and contrast the results of the behaviour of blood pressure during the Āsanas with its normal condition, averages of normal positions have been given on P. 114.

With a view to minimise personal differences, figures of average systolic pressures of the eleven subjects have been worked out for all the poses and for every minute of their continuation. On P. 115 these averages have been tabulated.

It will be noticed here that in the case the Sarvāṅgāsana (With Hands Extended) and S'īrshāsana, first there is

Continued on page 118.)

AVERAGE PULSE PRESSURE

Name of the Pose	Normal in Sitting	Initial	End of 1st m.	End of 2nd m.	End of 3rd m.	End of 4th m.	End of 5th m.	After the Pose in Sitting
Sarvāngāsana (With Hands Extended)	30·5 mm. Hg.	20·6 mm. Hg.	19·4 mm. Hg.	23·7 mm. Hg.	20·7 mm. Hg.	21·4 mm. Hg.	18·7 mm. Hg.	24·4 mm. Hg.
Sarvāngāsana	30·5 mm. Hg.	24·2 mm. Hg.	23·4 mm. Hg.	25 mm. Hg.	26·2 mm. Hg.	...	...	33·6 mm. Hg.
Matsyāsana	29·3 mm. Hg.	32·2 mm. Hg.	29·3 mm. Hg.	27·8 mm. Hg.	27·2 mm. Hg.	...	...	22·1 mm. Hg.
S'īrshāsana	33·8 mm. Hg.	35·7 mm. Hg.	31·4 mm. Hg.	29·3 mm. Hg.	29·3 mm. Hg.	25·8 mm. Hg.	23·2 mm. Hg.	32·4 mm. Hg.

SALIENT FEATURES OF BLOOD PRESSURE

Subjects	Normal S. P. in Sitting	Maximum S. P. During the Pose
A	145 mm. Hg.	160 mm. Hg
B	116 ,,	145 ,,
C	144 ,,	156 ,,
D	120 ,,	148 ,,
E	120 ,,	134 ,,
F	124 ,,	130 ,,
G	144 ,,	166 ,,
H	128 ,,	146 ,,
I	126 ,	152 ,
J	114 ,,	128 ,,
K	128 ,,	144 ,,

A FEW MORE FIGURES OF BLOOD PRESSURE

IN SARVĀṄGĀSANA (With Hands Extended)

After the Pose S. P. in Sitting	Normal Pulse Pressure	Maximum Pulse Pressure During the Pose	Pulse Pressure After the Pose in Sitting
140 mm. Hg.	37 mm. Hg.	25 mm. Hg.	28 mm. Hg.
130 ,,	28 ,,	27 ,,	25 ,,
142 ,,	36 ,,	34 ,,	20 ,,
128 ,,	24 ,,	24 ,,	23 ,,
110 ,,	35 ,,	26 ,,	14 ,,
118 ,,	28 ,,	26 ,,	28 ,,
148 ,,	39 ,,	30 ,,	36 ,,
110 ,,	26 ,,	30 ,,	12 ,,
128 ,,	31 ,,	26 ,,	32 ,,
118 ,,	24 ,,	20 ,,	24 ,,
122 ,,	28 ,,	20 ,,	26 ,,

SALIENT FEATURES OF

Subjects	Normal S. P. in Sitting	Mximum S. P. During the Pose
A	145 mm Hg	172 mm. Hg.
B	116 „	163 „
C	144 „	No Pulse
D	120 „	„
E	120 „	148 mm. Hg.
F	124 „	No Pulse
G	144 „	„
H	128 „	„
I	126 „	„
J	114 „	124 mm. Hg.
K	128 „	136 „

BLOOD PRESSURE IN SARVĀÑGĀSANA

After the Pose S.P. in Sitting	Normal Pulse Pressure	Maximum Pulse Pressure During the Pose	Pulse Pressure After the Pose in Sitting
134 mm. Hg.	37 mm Hg.	32 mm. Hg.	46 mm. Hg.
130 „	28 „	30 „	32 „
No	36 „	No Pulse	No Pulse
No	24 „	„	„
118 mm. Hg.	35 „	23 mm. Hg.	28 mm. Hg.
No	28 „	No Pulse	No Pulse
„	39 „	„	„
„	26 „	„	„
„	31 „	„	„
116 mm Hg.	24 „	28 mm. Hg.	30 mm. Hg.
120 „	28 „	26 „	32 „

SALIENT FEATURES OF

Subjects	Normal S. P. in Sitting	Maximum S. P. During the Pose
A	134 mm. Hg.	158 mm. Hg.
B	146 „	158 „
C	142 „	148 „
D	130 „	144 „
E	118 „	118 „
F	142 „	150 „
G	136 „	164 „
H	124 „	124 „
I	130 „	134 „
J	126 „	134 „
K	118 „	124 „

BLOOD PRESSURE IN MATSYĀSANA

After the Pose S. P. in Sitting	Normal Pulse Pressure	Maximum Pulse Pressure During the Pose	Pulse Pressure After the Pose in Sitting
143 mm. Hg.	26 mm. Hg.	30 mm. Hg.	27 mm. Hg.
140 „	12 „	26 „	20 „
130 „	32 „	38 ,	20 „
124 „	30 „	42 „	20 "
108 „	30 „	30 „	28 „
134 „	44 „	40 „	24 ,
140 „	40 „	50 „	28 „
122 „	30 „	30 „	24 „
124 „	30 „	30 „	14 „
122 „	28 „	26 „	16 „
122 „	20 „	26 „	22 „

SALIENT FEATURES OF

Subjects	Normal S. P. in Sitting	Maximum S. P. During the Pose
A	113 mm. Hg.	158 mm. Hg.
B	122 „	152 „
C	134 „	152 „
E	120 „	134 „
F	130 „	144 „
G	144 „	160 „
H	125 „	125 „
I	136 „	138 „
J	115 „	126 „
K	114 „	140 „

BLOOD PRESSURE IN S'ĪRSHĀSANA

After the Pose S. P. in Sitting	Normal Pulse Pressure	Maximum Pulse Pressure During the Pose	Pulse Pressure After the Pose in Sitting
144 mm. Hg.	23 mm. Hg.	40 mm. Hg.	44 mm. Hg.
134 ,,	28 ,,	46 ,,	42 ,,
134 ,,	34 ,,	40 ,,	29 ,,
118 ,,	40 ,,	36 ,,	18 ,,
134 ,,	30 ,,	38 ,,	34 ,,
144 ,,	59 ,,	44 ,,	39 ,,
128 ,,	39 ,,	27 ,,	24 ,,
140 ,,	32 ,,	38 ,,	38 ,,
108 ,,	25 ,,	24 ,,	12 ,,
130 ,,	28 ,,	34 ,,	32 ,,

AVERAGE NORMAL SYSTOLIC PRESSURE IN DIFFERENT POSITIONS

Position	Initial	End of 1st m.	End of 2nd m.	End of 3rd m.	End of 4th m.
Sitting	122·4 mm. Hg.	...	...	...	...
Standing	119·5 mm. Hg.	116·7 mm. Hg.	114·4 mm. Hg.	112·4 mm. Hg.	112·5 mm. Hg.
Lying Down	116 mm. Hg.	113 mm. Hg.	111·3 mm. Hg.	110·8 mm. Hg.	110·4 mm. Hg.

AVERAGE SYSTOLIC PRESSURE IN THREE YOGIC POSES

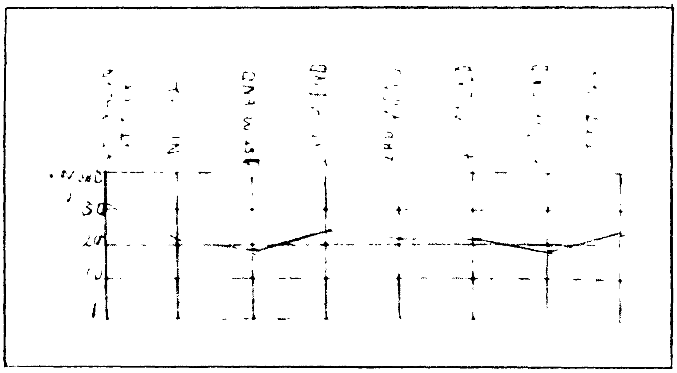
Name of the Pose	Normal in Sitting	Initial	End of 1st m.	End of 2nd m.	End of 3rd m.	End of 4th m.	End of 5th m.	After the Pose in Sitting
Sarvāngāsana (With Hands Extended)	128·1 mm. Hg.	139·6 mm. Hg.	140·7 mm. Hg.	143·3 mm. Hg.	143·6 mm. Hg.	143 mm. Hg.	142·9 mm. Hg.	126·7 mm. Hg.
Sarvāngāsana	128·1 mm Hg.	146·6 mm. Hg.	144 mm. Hg.	143·4 mm. Hg	146 mm. Hg.	...	...	123·6 mm. Hg.
Matsyāsana	131·5 mm. Hg.	139·8 mm. Hg.	137·6 mm. Hg.	137·5 mm. Hg.	137·9 mm. Hg.	...	...	128·1 mm. Hg.
S’īrshāsana	125·3 mm Hg.	136·1 mm. Hg.	137·6 mm Hg.	140·2 mm. Hg.	133·9 mm Hg	130 mm. Hg.	130·8 mm Hg.	131·4 mm. Hg.

PERCENTAGE OF MAXIMUM RISE IN SYSTOLIC PRESSURE IN DIFFERENT POSES

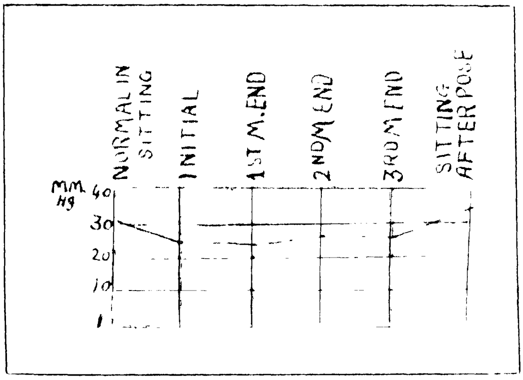
Subjects	Sarvāngāsana (With Hands Extended)	Sarvāngāsana	Matsyāsana	S'īrshāsana
A	10 3	18·6	17·9	39·8
B	25	40·5	8·2	24·6
C	8 3	No Pulse	4·2	13·4
D	23·3	,,	10·8	...
E	11·7	23·3	0	11·7
F	4·8	No Pulse	5·6	10·8
G	15·3	,,	20·6	11·1
H	14·1	,,	0	0
I	20·6	,,	3·1	1·5
J	12·3	8·8	6·3	9·6
K	12·5	6·3	5·1	22·8

Average Pulse Pressure

Pose—**Sarvangasana** (With Hands Extended) Fig. **LXII**



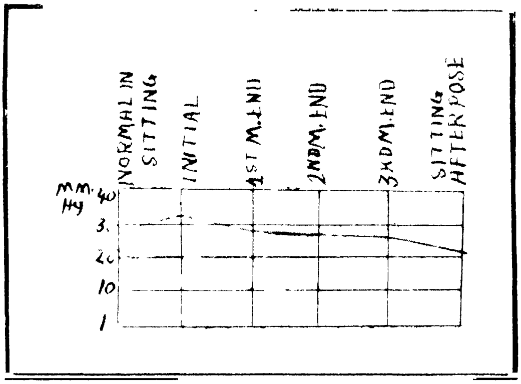
Pose—**Sarvangasana** Fig. **LXIII**



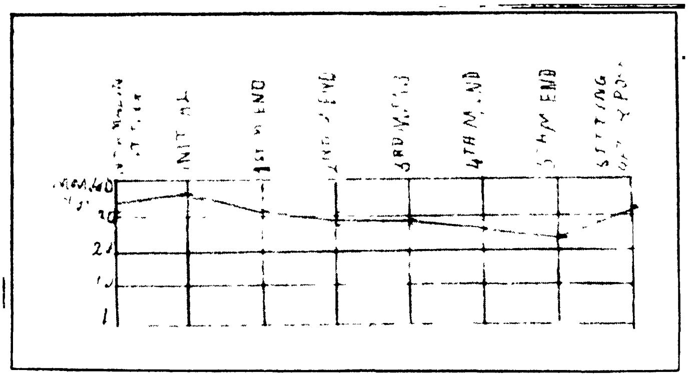
In these and following diagrammatic representations Ordinates = mm. Hg.; Abscissa = time in minutes; S. = Systolic and D. = Diastolic.

Average Pulse Pressure

Pose-**Matsyāsana** Fig. **LXIV**

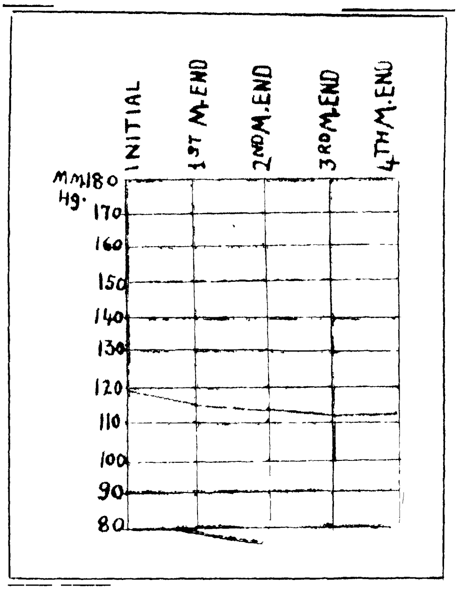


Pose-**S'īrshāsana** Fig. **LXV**

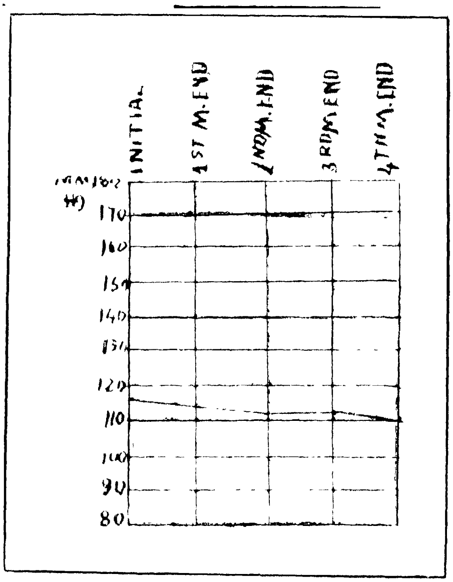


Average Normal Systolic Pressure

Position—**Standing** Fig. **LXVI**

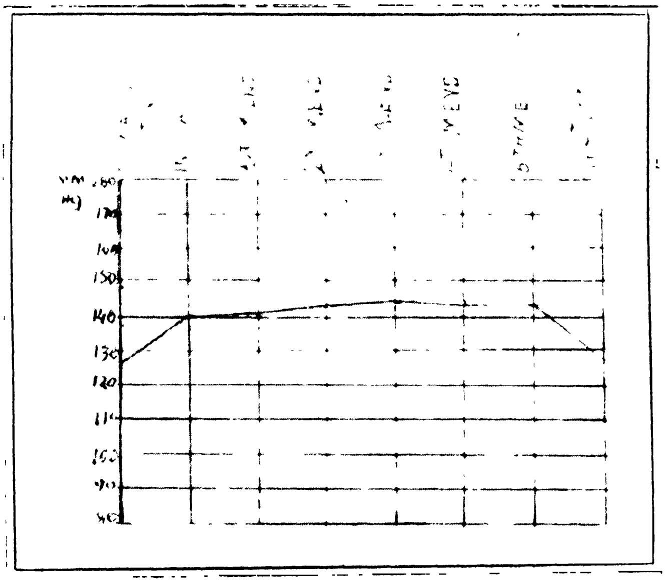


Position—**Lying Down** Fig. **LXVII**

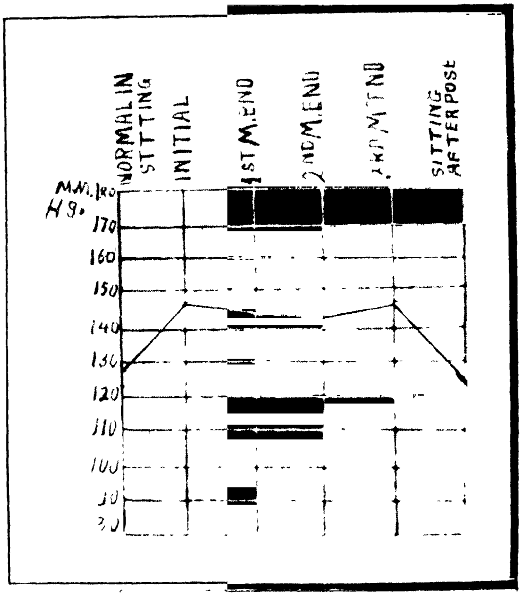


Average Systolic Pressure

Pose—**Sarvāṅgāsana** (With Hands Extended) Fig. **LXVIII**

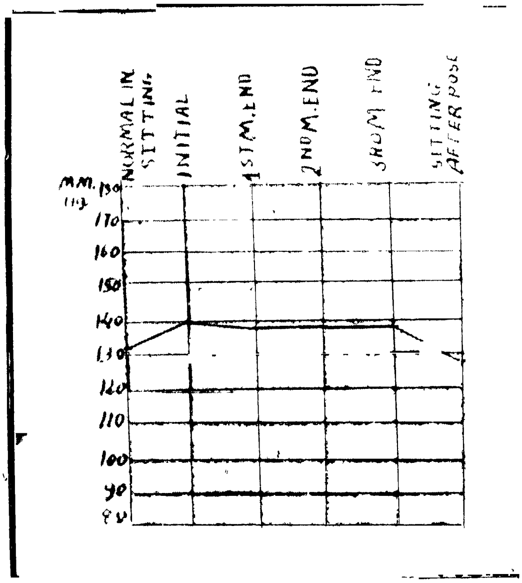


Pose—**Sarvāṅgāsana** Fig. **LXIX**

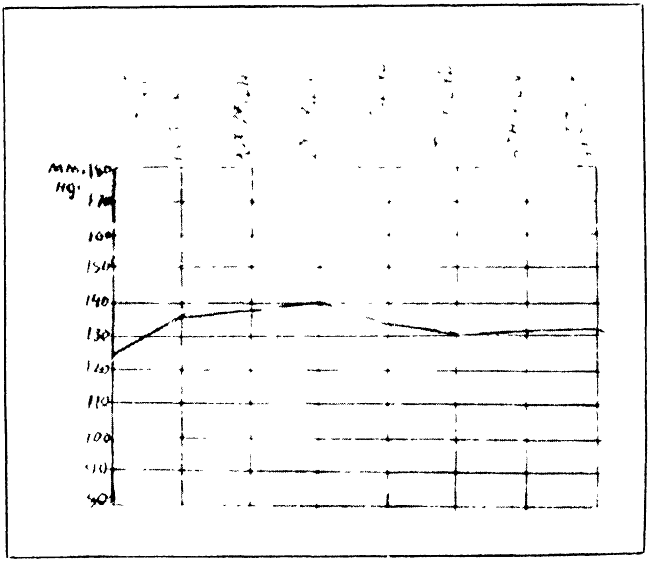


Average Systolic Pressure

Pose—**Matsyāsana** Fig. **LXX**



Pose- -**S'īrshāsana** Fig. **LXXI**



The Semi-Scientific Section

Continued from page 104.)

a steady rise, followed by a fall. In the case of Matsyāsana after the initial rise, there is a fall, whereas in Sarvāngāsana there is also a fall after the first rise, but again there looks to be a tendency to rise.

In the last table percentages have been worked out for ready reference.

We shall discuss our conclusions based on these facts and figures in an article in the next section.

YOGIC POSES AND BLOOD PRESSURE

IN the last issue we have seen what is meant by blood pressure. In this issue and especially in this article we want to know what conclusions can be drawn from the behaviour of blood pressure during the different Āsanas.

To start with we shall try to study why blood presure rises during every type of active exercise, so that we shall be in a position to understand the whole problem discussed in this article.

Every active exercise requires movements of a number of organs of the human body and every movement means contractions and relaxations of the different muscles that are connected with the moving limb. Now whenever a muscle is working, that is, is undergoing contractions and relaxations, it uses particular material that is available with it and this used up material is turned into waste products. This waste very largely consists of carbon dioxide which is poisonous. The human body is such a perfect machine that arrangements have been made to remove this poison from the system as soon as it is produced. The circulating blood current carries off these waste products with it and presents them to the lungs for being thrown out of the body and for being replaced by fresh oxygen. Under ordinary circumstances, when the body is not engaged in any active muscular work, the production and elimination of the waste is mutually proportionate and the system is saved from suffering from the accumulation of poison. But when active work is being done, and as a matter of consequence a number of muscles are undergoing contractions and relaxations rapidly, the amount of waste products is so large, that the ordinary blood current and the normal activity of the lungs are not able to purge the body of the large quantities of the resulting poison.

There is, however, an ideal cooperation between the different organs of the human body. As soon as the amount of waste material begins to increase, the heart starts putting in more work, making the circulation not only more rapid, but also more forcible. This rapidity and force of the blood current enable it to carry off a larger quantity of the poisonous wastes and to bring them to the lungs for being thrown out. The lungs too respond quickly to the additional demand upon their energy and acceleration of breathing immediately ensues. If this additional activity of the organs is able to cope with the work demanded of them everything goes on well. But in case of failure, the waste material is deposited in the system and ultimately leads to fatigue.

We do not wait to discuss here in detail how the two organs, the heart and the lungs, accomplish this additional work required of them. Suffice it to say that the heart, in order to get a mechanical advantage, is itself elongated and gives more powerful strokes driving the blood into the arteries These powerful strokes of the heart necessarily increase the pressure of the blood upon the arterial walls and lead to a rise in the normal blood pressure.

It requires no effort of immagination to understand that the more violent the exercise the greater will be the rise in blood pressure. For instance in a hundred-yard dash, occupying about ten seconds, blood pressure may go as high as 210 mm Hg., because throughout its course the concentration of attention is maintained at its highest point, the breath is held up and the whole muscular system convulsed with supreme effort. But if the same dash covers twenty seconds or more, blood pressure will be very little affected. Technically the first type of dash may be called an *exercise of effort** and the second an *exercise of endurance.** With a view to enable our readers to understand the very high rise of blood pressure during an exercise of effort, a table* is printed at the end of this article. In this case eleven subjects were tried in a lift in which the effort was maximum.

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* This classification of exercises including the Yogic Āsanas, will be discussed at some length in the next issue, in the Popular Section in our article, 'The Rationale of Yogic Poses.'

A comparison between this table and the tables printed on pages 114 to 116 of this issue, will show that the Yogic poses effect a comparatively low rise in blood pressure. That is because these poses are a mild type of exercises of endurance.

If we were to have a very strict definition of the word *exercise*, it is extremely doubtful whether the Āsanas can be called an exercise at all; because every exercise worth the name includes repeated movements of particular parts of the human body. Now the Yogic culture dictates that a physical culturist shall once for all take up a particular pose and maintain it for a specified time, without introducing any movements in it. Such a work hardly can go by the name exercise. But if we were to accept a wider and more comprehensive definition of the word, and make it cover any work undertaken to improve physique either with the help of the body itself or with the help of some external appliances, Yogic poses can very fittingly be called an exercise. It is needless to point out that we have been favouring the more comprehensive definition in our discussions in this journal.

The ancient savants of India, who developed and formulated the science of Yoga, have so wonderfully economised the expenditure of muscular energy, in every attempt to secure a particular physiological advantage, that they have almost reduced it to the minimum.† This has been accomplished in various ways. Our present theme and our researches, as far as they are published in the Yoga-Mīmāṅsā, will allow us to study only three of them.

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* The table is taken from McKenzie's 'Exercise in Education and Medicine'. There it is copied from American Journal of Physiology, March, 1901.

† This bold statement has not been blindly made. The evidence published upto now in the pages of this journal is not one hundredth of what we possess in support of our assertions and every new piece of our research work is adding to the previous stock. We are, however, quite conscious of the fact that it will take years of patient research work, before we can definitely assign a particular place to the Yogic system of physical culture in a graded list of the different systems of the world.

i They have eliminated* repeated contractions and relaxations of muscles from the Yogic poses. In fact the absence of repeated muscle contraction is one of the fundamental differences between the Yogic poses and the exercises of the other systems of physical culture. Of course the initial contraction of certain muscles is necessary for every Āsana except one, S'avāsana† or the *Dead Pose*. But the contracted muscles are kept up in their rigid form to the end of the pose when they are finally relaxed.

ii Not only is the repetition avoided, but the one enduring muscular contraction is considerably relieved by mechanical help wherever possible. Take for instance the Pan-Physical Pose. Here the muscles of the neck and the abdomen that are contracted in standing on the neck, are mechanically helped by the support of the hand. (See Fig. II, Vol. II, No. I.) This manual prop immediately reduces the expenditure of muscular energy otherwise required in this pose.

iii The two ways so far described only *economise* the expenditure of muscle energy. The third way that is to be discussed presently, effects a complete saving of that energy, its place being taken by the force of gravity helped by the activity of the *vasomotor centre* of nerves.

Now in order to understand this point, we shall first notice the functions of this *vasomotor centre* and then know how the action of this centre and that of the force of gravity are taken advantage of in the Yogic poses. Some information about the vasomotor centre has already appeared in Vol. I, on pages 276 and 277. Here we shall know something more about it.

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* Some discussion on this interesting point will be found in Vol. I, on pages 281 & 282, and also in the article, ' The Rationale of Yogic Poses' in the next issue.

† The technique etc. of this Āsana will be published in our next issue. It requires a complete relaxation of muscles.

The vasomotor centre is responsible for the regulation of the calibre of blood vessels. The same parts of the human body make a different claim upon the blood supply even within the twenty-four hours of the day. When a man is reading with utmost concentration, his brain requires the maximum quantity of the blood for its activity ; but when he is inclined to sleep he must have for his brain only the minimum. Just after a hearty meal the stomach must have for its work as much blood as it can appropriate; whereas when it is empty its demand upon the blood supply is reduced to the smallest measure. This is the case nearly with every limb of the body. Now for any twenty-four hours the total blood supply of the human body, under normal circumstances, is almost constant. So if a particular part wants a larger proportion of the blood than is normally given to it the additional quantity must be obtained by shifting the usual blood supply of the remaining parts. That is actually being done in every human body and the agency that is responsible for this diversion is the vasomotor centre. As soon as a demand is created, it is communicated automatically to this centre which immediately reacts by widening the small arteries of that part and effecting a compensatory narrowing of the other parts whose needs are not so great.

Again this very nerve centre is responsible for counteracting the effects of the changes of postures of the human body. The law of gravitation is universal and knows no exception, at least according to the present day science. Now, in the absence of any other influence, the effect of this law upon the blood circulation of the human brain or the abdomen would be quite different in different positions.

If a man were to sit erect after lying down for a while, his brain would be drained of all the blood which would flow down to the abdomen. If further the man stands on his legs, the abdomen too would begin to be emptied, the whole blood supply having a tendency to accumulate in the legs. But this never happens because of the influence of the vasomotor centre which immediately adjusts the capacity of the arteries and establishes again the original balance in the circulatory system. If, however, the influence of this centre is weakened, the force of gravity acts effectively and the results are clearly seen. We often find unhealthy persons feeling giddy if they suddenly assume an upright position. This is because the brain becomes void of blood due to the action of gravity which, in such cases, is not counteracted by the influence of the vasomotor centre.

Thus it will be seen that the influence of the vasomotor centre widens the arteries of a particular part whenever that part stands in need of a larger blood supply, but narrows these blood vessels when the normal blood supply is not wanted there. It will also be clear that this very centre counteracts the effects of the force of gravity by the necessary adjustment of the calibre of blood vessels, whenever the position of the human body is changed.

This, however, does not mean that the law of gravitation has no influence upon the quantity of the blood circulating through the various parts of the body, whenever the body assumes a different position. Nay, the force of gravity does affect the quantity, and a larger supply does flow to the lowered parts. Only the vasomotor centre regulates the quantity in such a way that no part is allowed to starve and blood pressure is not allowed to go very high in any part of the body.

We shall take an illustration. If we consider S'irshāsana, when a man stands on his head, the force of gravity would draw the whole blood supply to the head draining the legs and the abdomen. But the vasomotor centre prevents this by governing the calibre of the arteries in such a way that no organ suffers from animia. Not only that but it so tries to adjust the capacity of the arteries that the tension upon their walls, exerted by the richer blood flow attracted by the force of gravity, is kept within proper limits. Blood pressure is not allowed to rise very high.

Thus the work of getting a richer blood supply for a particular part is done by the action of gravity and the work of keeping the pressure within proper limits is done by the vasomotor centre. This completely saves all muscular work required by other systems of physical culture to accomplish the same purpose.

This detailed discussion about the utmost economy of muscle work secured by the ancient savants in the practice of Yogic poses, will explain clearly why the rise in blood pressure during the poses is so small.

An examination of the table printed on P. 115 recording the average systolic pressure, will show that after two or three minutes' duration, blood pressure has a distinct tendency to return to the normal. Taking S'irshāsana which should, on account of its upside down position, give us the maximum rise, we find that there is an increase of some 15 mm. Hg. only. This is reached at the end of the second minute after which there is a fall. The same is the case with Sarvāṅgāsana (With Hands Extended) .The maximum blood pressure is recorded at the end of the third minute when it begins to fall towards the normal. The Fish Pose is still more peculiar. Here the fall commences just after the initial rise. The figures of the Pan-Physical Pose are recorded only upto to the third minute. They therefore, only record the increase. Had we been able to give figures for the next few minutes, *most probably,* they would have shown a fall. These pressures could not be ascertained because of the progressive contraction of the muscles of the arms.

These records are for five minutes only. But the experience of every student of Yogic culture is that the longer the pose is continued the more normal becomes the blood circulation. Of course the duration of the pose will have to be slowly developed by a constant daily practice.

There is always a tendency on the part of blood pressure to sink below the normal just after the exercise. The same tendency is marked in the case of Yogic poses also. The last column of the table on P. 115 will make it clear when compared with the normal pressures noted in the second column of the same table. Here too it will be immediately seen that the fall below the normal is very slight and in one case, that of S'īrshāsana, there is no fall at all. This table gives the averages of eleven subjects experimented upon and as such can be safely relied upon as a piece of evidence.

On P. 116 percentage of the maximum rise in the case of every subject during all the poses examined, has been given. It will be noted here that out of the 38 percentages recorded, three are worth a cipher only and twelve more are below ten! There are only two above thirty. Thus, by extreme economy of the expenditure of muscle energy, the old Indian savants secured the most moderate fluctuation in blood pressure during the Yogic poses. High blood pressures put a great strain upon the whole circulatory system and especially upon the heart. So, if the circulatory system is to be saved from strains, we must have exercises that cause a very moderate rise, if at all

When the heart is robust and the circulatory system healthy and elastic, even doubling the normal blood pressure does not cause any injury. In the table given at the end of this article one case records a rise of 92·7%! But when the heart has become weak and the whole circulatory system impaired either through age or disease, only such exercises are desirable as would cause only a moderate fluctuation in blood pressure and in the consequent tension upon the heart and the arteries. Under these circumstances. Yogic poses are an admirable set of exercises, provided they are practised rightly and with due caution.

This should not be interpreted to mean that the Āsanas can be of use only to the weaklings of humanity! We have ample evidence to show that, so far as health is concerned, they are an unrivalled set of exercises even for the towers of strength!

We cannot close this article without sounding a note of warning both to the medical men and to the laity about their attitude towards exercise in general in the case of persons having heart complaints. We have no wish to treat this subiect at length here, nor is there any place for such a treatment of the subject in this article. We only wish to point out to the medical men that *many of them very often* are seen to exaggerate the evil effects of exercise on the human heart and also the claims of rest cure in the case of cardiac complaints. Laymen go to the other extreme and even when expert medical advise wants them to take complete rest, they, in their ignorance, undergo an amount of strain which leads to serious consequences. We stand for avoiding both these extremes.

A paragraph from Brunton's *Therapeutics of the Circulation* which bears on the ignorance of the laity, may be quoted here with advantage.

" It is very hard indeed to make patients understand what one means by absolute rest. They are inclined sometimes to take the expression as meaning that they shall stay in the house, but that they may go up and down stairs as often and as quickly as they please. Now, few people have any idea of the amount of work involved in going upstairs. The weight of the body is so evenly distributed upon the muscles of the legs that we hardly feel the exertion in health; but if we suppose that we had fixed upon the bannisters of the stairs on the bedroom floor a strong pulley provided with rope and basket, and that the patient, weighing, let us say, 150 lbs., is put into the basket on the ground floor, and that we had to pull him up by means of the rope, we will then understand the number of foot-pounds* involved in the amount of exertion required to bring him from the dining-room floor to his bedroom. The weight is the same and the height is the same when the patient is drawn up in a basket and when he walks up himself. By putting the position before a patient in this way I have sometimes succeeded in convincing him that the work involved in walking upstairs was really great, and more than his enfeebled heart could stand. But it is not merely in walking upstairs that the heart has extra work to do. Even in getting into bed work requires to be done, and unfortunately, as in the case of a patient whom I saw immediately after giving my third lecture, the exertion of getting into bed may prove fatal."

To the medical men we say the following few words. Barring such extreme cases of heart diseases as require absolute rest, it is idle to advise complete inactivity to every patient with cardiac complaints as soon as they show some seriousness. Not only in the Yogic but also in other systems of physical culture, there are graduated exercises prescribed for heart diseases; and we strongly advise our medical men to recommend these to their patients. These exercises in the west are not advocated by physical culturists but by medical men of high standing. Breathing exercises in Yoga have a special efficacy in this connection and the Yogic poses are very good for people who have no specific complaints, but suffer from a general weakness of the circulatory system. They should, however, be practised under expert supervision.

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* One *foot-pound* is equal to the energy required to raise one pound of weight through one foot against gravity. Thus if four pounds were raised three feet high, the energy expended would be equal to twelve foot-pounds.

The undue caution observed by many medical men in the matter of exercise, can be best seen when they talk of the effects, immediate as well as remote, of the exercises of effort, such as wrestling, running, rowing, cycling etc. They positively think that these violent exercises, if freely indulged in especially in keen competitions, are sure to lead to trouble. But that is far from the truth. We quote here some paragraphs from McKenzie's *Exercise in Education and Medicine* which will clearly show that the medical men are unnecessarily overcautious in matters of exercise.

"The first careful investigation to determine the after effects of athletic competition was on university oarsmen at Oxford and Cambridge. The crew man is required to row repeatedly a distance of 4 miles at top speed, the twenty five minutes being spent in a posture which impedes full freedom of the lungs and heart action.

"E. H. Morgan took contestants of the interuniversity boat races between Oxford and Cambridge from 1829 to 1869 as his field, and communicated directly with 151 of the 255 survivors, as well as the relatives of the 39 who were dead, making a total of 294 reports received. Of these, 7 either speak of themselves as probably injured or were so described by their relatives, sometimes with considerable reservation. On tabulating the crews with reference to expectation of life, as compared with *Farr's English Life Insurance Tables*, which place the expectation of a man of twenty at forty years, he found that the expectation of these oarsmen was forty-two years. Of the 39 deaths, he found 11 died of fever, 7 of consumption, 2 of other forms of chest disease, 6 of accident, 3 of heart disease, 1 of Bright's disease, and 8 of various causes not connected with athletics. Of the 7 deaths from consumption, it was found that nearly all had a strong personal or family history. This was about the average mortality from diseases of the circulatory apparatus, as well as from consumption, as disclosed by the registrar-general's report, and it must be remembered that they rowed without preliminary medical examination, the unfit being weeded out by the more costly elimination of the oar. There were no sudden deaths nor rapidly fatal heart cases.

" In America, similar but much more complete observations were made on Harward oarsmen by George L. Meylan of Columbia, who interviewed every survivor personally where possible or had reports made out by their medical attendants. He found that 152 men had rowed from 1852 to 1892, of whom 123 still survived (November, 1902), thus allowing 11 years to elapse after the last race observed to give time for any evil effects to show. He interviewed 76 men personally, and sent to all a questionnaire that was most admirable in its completeness. In longevity the first crew (1852) showed an increase of 1 6 years per man as compared with the selected lives of the insurance tables in which a man of twenty has an expectation of 42·2 years. His results were interfered with by a number of deaths of men in their prime during the Civil War. By allowing to those killed in battle the ordinary expectation of men of their age, the advantage would be increased to 5·39 years per man. Of the 32 deceased oarsmen, 2 died of heart disease, 1 of consumption, 2 of Bright's disease, 8 were killed in the Civil War and by accident, 3 died of pneumonia, 2 of apoplexy, 1 of dissipation, 1 of paresis, 1 of cancer, and 10 of unknown causes. In neither of the 2 cases of heart disease was rowing given as the cause. The after-health was most satisfactory in 68, good in 36, and poor in one. Two believed that rowing had injured them, 1 claiming to have dyspepsia and the other an enlarged heart, which, however, had caused him no inconvenience since he left college. These results would seem to prove conclusively that rowing is not a serious factor in the production of early death from disorders of the circulation, but it must be remembered that these were lives doubly selected, first for constitutional vigor, and secondly for muscular strength."

What we want our medical men to see is that the evil effects of exercise upon the healthy as well as the unhealthy heart, are *often exaggerated* by them; and that the rest cure is prescribed in cases that can best be helped by graduated exercises. Personally we have seen Yogic exercise wonderfully improving a number of people in cardiac trouble.

BLOOD PRESSURE

Name	Age	Weight	Weight Lifted
Sk	31	157·5	486
Ma	23	137·3	265·5
De	30	135	294·8
Sa	31	153	423
McC	33	168·8	382·5
Ar	21	168·8	400·5
St	41	186·8	335·3
Hi	25	135	348·8
Be	26	137·3	299·3
Me	27	162	560·3
Ja	26	168·8	342

IN WEIGHT LIFTING

Systolic Blood Pressure			Percentage of Rise
Before Lift	During Lift	2-3 m. After Lift	
109 mm. Hg.	210	113	92·7
109 „	165	107	51·4
93 „	146	95	57
100 „	175	101	75
124 „	178	125	43·5
117 „	207	117	75·4
122 „	202	114	65·6
100 „	154	107	54
108 „	157	108	45·4
107 „	188	110	75·7
127 „	197	130	55·1

A NOTE ON DUCTLESS GLANDS

We have employed the word *ductless* according to the practice of the orthodox physiologists. The word that is now finding universal acceptance is *endocrine.*[*] We shall prefer this word in our writings hereafter.

Though the title of this note would confine us to a treatment of glands alone, we are not going to restrict ourselves only to endocrine glands, but we shall speak of the endocrine organs in general, because besides glandular there are other endocrine tissues equally important.

Endocrine organs are those that secrete specific chemical substances which are directly passed into the blood or lymph and which influence the functional activity, growth or development of other distant organs. These substances which are specific for each one of the endocrine organs, are called *internal secretions.*

These secretions are to be distinguished from others which are manufactured by such organs as the liver,[¶] the pancreas etc., and which are discharged into the system by means of a duct. The common bile duct carries the bile from the liver and the pancreatic duct carries the pancreatic juice from the pancreas, ultimately to be discharged into the small intestine. But internal secretions are directly absorbed into the blood and are not required to be carried away in ducts.

The principal endocrine organs are the thyroid, parathyroids, pituitary, adrenals, sex glands, pancreas, thymus, pineal, spleen, kidneys, and liver. Definite information concerning the properties of the internal secretions, is available only in the case of the first six; about the remaining less is known. We shall take a brief notice of some of

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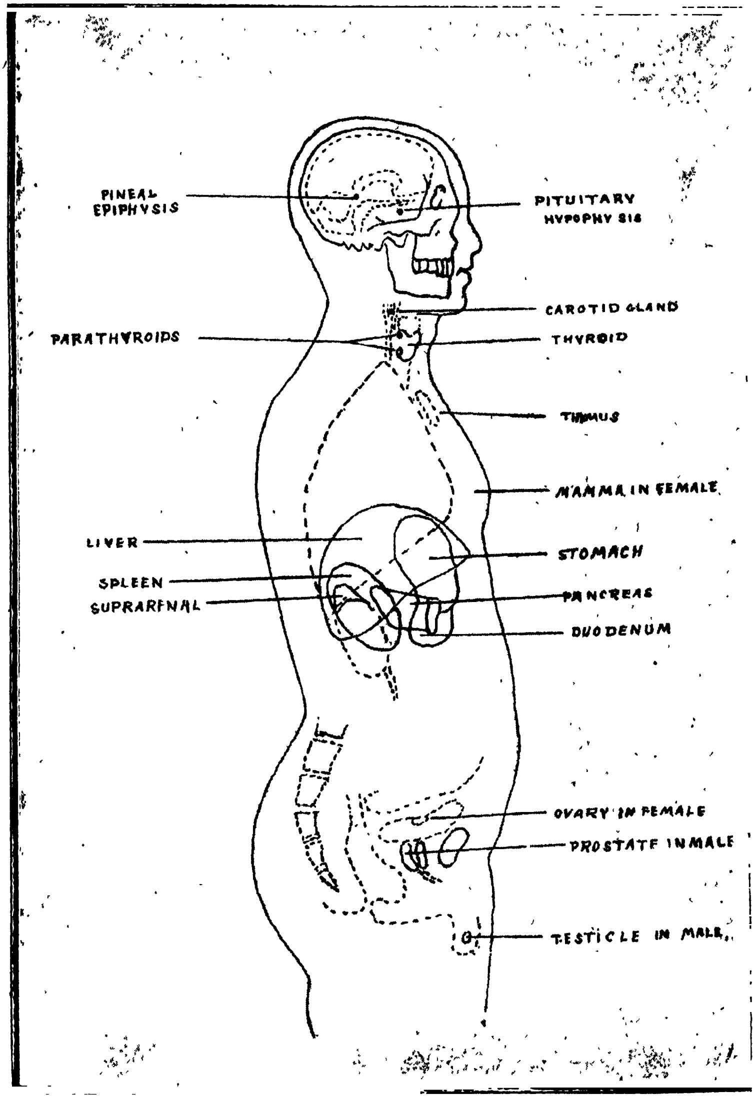
[*] Greek : Endo—within, and Krino—I separate out.

[¶] These organs have internal secretions also.

Fig. LXXII



Anatomical Position of Endocrine Organs.

these, with a view to know their anatomy. (See Fig. LXXII) A word will be said about their physiology also.

Thyroid—The thyroid is situated at the front and sides of the lower part of the neck. Its weight is usually 30 gm., the gland being slightly heavier in the female. The secretion of the thyroid has a profound influence over metabolic§ processes generally, and exercises its effects on the whole autonomic* nervous system.

Parathyroids—The parathyroids are small bodies situated on the posterior side of the thyroid. They are generally four in number. They measure on an average about 6 mm. in length and about 3 mm. in breadth. Their internal secretion is essential to the well-being of human economy. When it suffers it leads to the production of tetany, convulsions and fits of various sorts.

Thymus—The thymus is situated partly in the thorax and partly in the neck. It increases in size until the age of puberty, after which it dwindles and undergoes a gradual involution. At birth it weighs about 13 gm. and at puberty between 35 and 40 gm. It is heavier in the male than in the female. Thymic enlargement leads to serious disturbances in the respiratory system and to the attacks of asthma. If the enlargement is considerable, it may even lead to death.

Pineal body—This is a small conical body roughly speaking situated above the cerebellum or the small brain. It measures about 8 mm. in length. The pineal is larger in children than in adults, and in females than in males. The functions of the pineal are not well understood. Probably its secretions are concerned in the growth and development of the sex organs and of bodily growth in general.

Hypophysis—The term hypophysis is somewhat vaguely used for the pituitary body. It is situated at the base of the brain and is ovoid in shape. Its diameter varies from 8 to 12 mm. The internal secretions of the pituitary have a profound influence upon metabolism and the growth of the skeleton. When there is an over activity of this gland, the size of the face, hands and feet increases out of all proportions, and the disease called acromegaly establishes itself.

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§ Metabolism is the process by which food stuffs are transformed into those elements that form tissues.

* This will be presently explained. A reference may also be made with advantage to pages 51-53 of Vol. I.

Adrenals—Adrenals, also called suprarenal glands, are situated above the kidneys and are usually two in number. The right is triangular, the left almond shaped and usually the larger. They measure from 30 to 50 mm. in height, about 30 mm. in breadth, and 4 to 6 mm. in thickness. The average weight of each is from 3 to 4 gm. When secretion of the adrenals becomes inadequate Addison's disease follows. Patients with this disease become pigmented in various parts of the body, possibly from irritation of sympathetic, and complain of great weakness, lack of energy, nausea, and severe attacks of vomiting. Their blood pressure is low, the whole nervous system is depressed, and death follows after a period of months or years, usually for want of strength.

Testes*—The testes are the two reproductive glands of the male. They are held in a sack called the scrotum which hangs between the thighs. The weight of each testis varies from 10·5 gm. to 14 gm. The internal secretion of the testes is responsible for all secondary sex characteristics and for whatever goes to develop manliness.

Ovaries—The ovaries are the two reproductive glands of the female. They are situated in the pelvis, one on either side of the uterus. Each is about 3 cm. long, 1·5 cm. wide, and about 10 mm. thick. In the case of the ovary, there is without much doubt more than one internal secretion. All the secondary sex characteristics of females are due to the internal secretions. Ovarian inactivity may lead to the growth of hair on the face and heaviness of voice and the disappearance of all feminine graces.

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* For details see P. 278, Vol. 1.

Pancreas—The pancreas is an elongated gland resembling a bunch of grapes. It is 12 cm. to 15 cm. in length, being situated across the posterior wall of the abdomen. Pancreatic internal secretion, if it suffers, leads to diabetes mellitus.

Even this rapid survey of the endocrine organs is sufficient to prove their supreme importance in the economy of human well-being. But this importance will be more clearly seen when we understand how internal secretions work in the body.

There are a number of possibilities as to the manner in which the internal secretions, active chemical substances, may bring about their characteristic effects, but there are two methods which are generally held to account for the great majority of internal secretion effects. According to *one of the methods*, these chemical substances manufactured by the endocrine organs first work upon the autonomic nervous system and through its medium produce the necessary changes. We shall take an illustration to make this clear. There is a stage in the life of the chick embryo when the autonomic nerve supply of the heart is not developed. If during this period the active principle of the suprarenal glands called *epinephrin* be injected, it has no effect upon the heart. But if the same substance is injected after the nerve supply develops, the effect is immediately seen. The reason is this. Epinephrin can work only through the medium of the sympathetic and therefore there is no action in its absence. But when that nerve supply is present epinephrin has its effect. *The other method* does not require the intervention of the sympathetic but works directly upon the cells affecting their metabolism. Extracts of the posterior part of the pituitary body lead to the contraction of the involuntary muscle all over the body: intestines, bladder, uterus, stomach and spleen all are contracted. This uniform contraction of *all* the involuntary muscles would not be possible, if the pituitary extract were to work through the autonomic nervous system. For this system when stimulated gives rise to contractions in some involuntary muscles and relaxations in others. Hence it will be clear that the active principle of the pituitary body has a direct action upon the muscle cells. The thyroid secretion also directly influences all the cells in our body, increasing their metabolic activity.

This study of the two methods in which the endocrine secretions bring about their characteristic effects, has placed us in a position to understand how the life processes of the human body are influenced by the effects of the internal secretions. We have seen that some of these secretions influence the autonomic nervous system. Now as this system governs the health of the vegetative organs, it is clear that the internal secretions affect these vegetative organs also. The vast importance of the effects of the internal secretions upon the human body, will be clear to us when we see the influence of the autonomic nervous system upon the life processes.

The autonomic nervous system consists of two parts—the sympathetic and the parasympathetic. We have already described the sympathetic in Vol. I on pages 52 and 53. We shall attempt a brief sketch of the parasympathetic here and then study their functions.

On P. 52 of Vol. I of this journal, we have referred to the twelve pairs of cranial or cerebral nerves that start from the brain and are distributed to the different parts of the body. The tenth pair consists of the two vagi. It is in this vagus nerve that the fibres of the parasympathetic lie for the most part. To a lesser extent they also lie in some other cranial nerves. The sacral part of this system is distributed through the sacral nerves issuing from the spinal cord. The parasympathetic approaches the heart, stomach, intestine, and pancreas through the vagus, whereas the descending colon, rectum, anus, and genitals are reached by it through the sacral nerves.

Now the sympathetic and parasympathetic systems between themselves govern the principal processes of the human body. These processes are mainly dependent upon the digestive and the circulatory systems. The digestive system transforms the food in such a way as its absorption and assimilation renders constant building up of the tissues and preservation of energy possible. Here the whole digestive tract together with the organs connected with it such as the salivary glands, the liver and the pancreas, is principally under the influence of the sympathetic and the parasympathetic. Whereas the latter increases the intestinal activity and promotes the salivary and other glandular secretions, the former has an opposite effect. The circulatory system is no less at the mercy of the sympathetic and the parasympathetic. The action of the heart is accelerated by the former and slowed by the latter.

Thus it will be seen that between the sympathetic and the parasympathetic there is a sort of physiological antagonism. These two opposite forces create a sort of functional equilibrium in the vegetative organs and regulate their activity to the best possible advantage of the organism concerned. Not only the organs that are specified above, but every involuntary organ responsible for the life processess of the body, is mainly swayed by the sympathetic and the parasympathetic. Naturally, therefore, when the normal balance of these two opposing forces is upset, the health of the organ suffers.

Now when it is remembered that this very powerful autonomic nervous system is in its turn widely influenced by the endocrine secretions we realise the supreme importance of the endocrine organs in the economy of human well-being.

We take a striking illustration of extreme pathological conditions arising from the withdrawal of the internal secretory activity of an endocrine organ. The *menopause* which is characterised by physiological cessation of menstruation, occurs when the ovaries cease to give their internal secretion. This leads to irritation or depression, vertigo, faintness, tachycardia, cold sensations in the hands and feet, vicarious bleeding from various parts of the body, and many other symptoms, which show that the whole balan-

Continued on page 144.)

EFFECTS OF ENDOCRINE ACTIVITY

	THYROID		PARATHYROID		THYMUS	PINEAL
	Hyperfunction	Hypofunction	Hyperfunction	Hypofunction	Hyperfunction	Hyperfunction
Hair	Luxuriant growth, fine texture and lustre,	Loss of hair or scanty growth. Brittle. Thinning of outer one-third of eyebrows.			Hair distribution of opposite sex-	Tendency to extensive development of hair.
Skin and Face	Soft, white velvet-like, moist skin. Increased perspiration.	Thick, infiltrated, rough, dry skin.			White skin.	
Stature and Skeletal System	Small bones. Tapering, thin fingers.	Dwarfism Small, stunted deformed bones. Thick, club-like fingers.	Tendency to deposits of calcium salts		Either tall or short. Physical contour of opposite sex.	Increased height
Mentality and Nervous System	Anxious, restless, unstable and tendency to emotional upset. Nervous irritability. Tremor Hot flashes. Insomnia.	Impairment of mentality. Dullness, imbecility, lack of initiative.		Tetany. Spasms of muscles of face, hands and feet. Excitability of peripheral nerves.		
Sexual Organs	Lowered sexual activity. Amenorrhea.	Amenorrhea. Lowered sexual activity.			Undeveloped sex organs.	Enlarged sexual organs. Sexual precocity. Early puberty.

Gastro-Intestinal Tract. Teeth	Diarrhea, constipation, vomiting, indigestion, hyperacidity, white, well-formed pearly teeth.	Constipation. Poorly formed irregular teeth. Delayed dentition.		Defective teeth. Gastro-intestinal Symptoms.	Large middle incisor (lateral incisors normal.)	Gastro-intestinal symptoms.
Heart and Lungs	Tachycardia. Irregular heart action and rapid breathing.	Low blood pressure. Slow heart action.	Arteriosclerosis. High blood pressure.		Thymic asthma. Difficult respiration due to pressure symptoms. Atrophic cardiovascular system. Irregular heart.	
Muscular System					Asthenia. Muscular weakness.	
Metabolism	Greatly increased metabolism. Lowered carbohydrate tolerance. Decreased body weight.	Lowered metabolism. Obesity. Increased carbohydrate tolerance. Low body temperature.				Obesity. Increased carbohydrate tolerance.
Diagnosis of Disease Processes or Prominent Signs and Symptoms Requiring Treatment	Exophthalmic goiter. Goiter. Gastro-intestinal disorders.	Constipation. Cretinism. General debility. Backward children (mental and physical.) Asthenia. Physical and mental inertia. Amenorrhea.	Defective calcium metabolism.	Ulcers, varicose, gastric and duodenal. Defective calcium metabolism.	Infantilism. Sexual immaturity.	Sexual precocity.

EFFECTS OF ENDOCRINE ACTIVITY

	PITUITARY		ADRENALS		TESTES		OVARIES	
	Hyperfunction	Hypofunction	Hyperfunction	Hypofunction	Hyperfunction	Hypofunction	Hyperfunction	Hypofunction
Hair	Heavy growth of hair, particularly on extremities and chest. Heavy eyebrows.	Scanty hair growth. Hair distribution of opposite sex.	Early development of heavy, coarse hair. Hetero sexual distribution. Eyebrows meeting in centre. Growth of beard in women.	Scanty growth.	Early development of axillary and pubic hair.	Scanty hair with distribution of feminine type.	Early development of axillary and pubic hair.	Lack of development of axillary and pubic hair.
Skin and Face	Thickened, dry, wrinkled. Large thickened nose. Thick lips. Enlarged tongue.	Soft, white, delicate skin or dryness of skin after puberty.		Marked pigmentation and darkened colour, particularly of genital organs, areola of nipple.		Thin white skin.		
Stature and Skeletal System	Large skeleton. Distortion of bones of face, skull and epiphyses of long bones. Thick clubbed fingers.	Small stature. Small, short bones. Tapering narrow fingers.			Rapidly developing tall skeleton.	Tall, thin type with delicate arms and legs, or fat sluggish type.	Rapidly developing large skeleton.	Tall, slender skeleton.
Mentality & Nervous System	Slow mental processes. Stuporous. Head-ache (in Hypertrophy.) Dull mentality.	Head-ache. Drowsiness. Apathetic. Sluggish and retarded mentality.	Alert, active mentality. Increased reactivity of the sympathetic nervous system.	Languid. Asthenic. Lack of interest.	Tendency to mental precocity.	Slow mentality. Dullness. Lack of "drive" and initiative.	Tendency to mental precocity.	
Sexual Organs	Large sexual organs. Am rhea. Loss of sexual desire.	Sex characteristics of opposite sex. Polyuria. Very small sex organs. Amenorrhea. Lack of sexual desire and power.	Male sex characteristics and enlarged clitoris in women. Precocious sex development. Large breasts. Early & irregular menstruation. Early potency.	Poorly developed sexual organs.	Large sex organs. Precocious sexual activity.	Small undeveloped sex organs.	Precocious sexual development and desire. Early menstruation.	Undeveloped sex organs. Amenorrhea or irregular menstruation.

EFFECTS OF ENDOCRINE ACTIVITY

Gastro-Intestinal Tract Teeth	Teeth widely spaced.		Digestive disturbances. Vomiting Large canine teeth	Pigmented teeth.	Early dentition.		Early dentition.	
Heart and Lungs	Voice changes to heavy tone.	Normal or low blood pressure. Slow pulse.	High blood pressure. Increased pulse rate.	Low blood pressure. Shallow breathing.			Low blood pressure.	High blood pressure.
Muscular System		Fatigability	Increased strength (hyperfunction of cortex in women.)	Asthenia. Fatigability.				
Metabolism	Increased basal metabolism. Lowered carbohydrate tolerance.	Lowered metabolism. Obesity (girdle and mammary), (or thin delicate type.) Increased carbohydrate tolerance	Obesity. (Later, loss of weight.) Increased metabolism.	Disturbed carbohydrate metabolism (Usually increased.) Loss of weight.				Obesity. Lowered metabolism.
Diagnosis of Disease Processes or Prominent Signs & Symptoms Requiring Treatment	Acromegaly. Amenorrhea. Impotence. Tendency to giantism.	Low temperature Dystrophy adiposogenitalis Assumption of characteristics of opposite sex. Immature sexual development. Impotence. Asthenia. Lack of physical & mental force and initiative.	Assumption of characteristics of opposite sex. High blood pressure. Obesity. Sexual precocity. "Infant Hercules." Early menstruation.	Asthenia. Lack of physical and mental force. Low blood pressure. Neurasthenia. Addison's disease.	Sexual precocity.	Sexual immaturity. Infantilism.	Osteomalacia, menorrhagia, dysmenorrhea. Sexual precocity.	Amenorrhea. Irregular menstruation. Sexual immaturity.

Continued from page 139.)

ce is upset. Generally speaking the disturbances are not so universal, but are confined to particular parts of the body. Still every abnormal change in the internal secretions of the endocrine organs does produce a pathological symptom.

We have spoken at some length about the autonomic nervous system and the endocrine organs because the Yogic culture very largely takes advantage of these in its exercises.

According to the other method, endocrine secretions directly affect the cells. Without discussing how this is done, we shall only exemplify it. The action of the thyroid secretion is the best example. As soon as this secretion suffers, the cells of the most distant parts of the human body slowly begin to undergo a change. The hair begin to grow grey, the nails have a tendency to be brittle, fatty degeneration starts in the arteries, the face tends to be wrinkled, weakness creeps over the brain, in fact, many senile symptoms begin to be apparent !

There are some physiologists who go so far as to assert that the development of racial characteristics is dependent upon the character and extent of the development of the endocrine organs, and that different races may be classified as hypophyseal types, thyroid types, etc. It is known that the pituitary, thyroid, gonads, adrenals, etc., are concerned with particular phases of growth and development, such as height, pigmentation, form, etc.; but the subject yet requires much more study.

Tables given on the preceding four pages state the effects of the hyperactivity and hypoactivity of endocrine organs.

Preparations containing internal secretions are made out of endocrine organs of animals and are used in treatment of diseases. This is what constitutes *organotherapy.* This method is fast gaining ground.

Yogic therapeutics aims at restoring the internal secretions to their normality by securing the health of the endocrine organs through Yogic practices.

The Popular Section

N. B. The Director of the Kaivalyadhāma entreats every man of means to show his active sympathy for the Ās'rama.

N. B. Instruction in Yogic culture higher as well as lower will be given gratis at the Ās'rama to every one that earnestly seeks it.

Following diseases, especially in their chronic condition, can be effectively treated by the Yogic methods:

1 *Constipation.*
2 *Dyspepsia.*
3 *Head-ache.*
4 *Piles.*
5 *Heart-disease.*
6 *Neuralgia.*
7 *Diabetes.*
8 *Hysteria.*
9 *Consumption.*
10 *Obesity.*
11 *Sterility (certain types).*
12 *Impotence.*
13 *Appendicitis, &c.*

Therapeutical advice is given gratis at the Ās'rama to patients coming for consultation.

Arrangements have been made under the supervision of the Ās'rama for students and patients to stay on payment of actual expenses, Rs. 45 P. M. For details see pages 157–159 of this issue.

SOME PRACTICES FOR INCREASING STATURE

In these days of keen competition, only the fittest can survive. Physical efficiency is a factor in this fitness, because it is only the physically fit that can best make the first impression. A tall figure has immence advantage over a stunted frame. That is why physical culturists are very busy inventing mechanical devices for increasing human stature and are approached by clients in hundreds, if not in thousands. The ancient Yoga of India teaches a number of practices that can be utilised for this purpose. In this article it is intended to pick out a few of them and to see how they look in the light of modern sciences.

The question of stature is a question of bones and cartilages. Hence a few physiological facts relevent to them are noted here.

Bones, like all other tissues, are composed of cells, penetrated by nerves and blood vessels, are very plastic both to the normal forces of growth and to external influences, and are subject to many diseases. They are completely covered out by a dense fibrous coating called the periosteum, which is richly supplied with blood, and plays a chief part in the growth of bones. The cavity side of the bones is also lined with a similar membrane called endosteum also rich in blood vessels.

The bones of the lower extremity and the vertebral column are mainly responsible for a man's height. The arrangement of the latter deserves a little attention for the right understanding of the subject. The vertebral column is composed originally of 32 separate pieces, each piece being called a vertebra. In the adult state the separate pieces number only 26, several having become fused together. The separate pieces are arranged one on the top of the other, cushions of gristle, called cartilages, being interposed between each, which also help to unite them, while the union is completed by partially moveable joints and by strong fibrous bands called ligaments.

Human height is principally determined by the longitudinal growth of the skeleton. Though this type of growth depends upon the general growth of bones, this article is meant for studying those Yogic exercises only which directly bear upon their longitudinal development.

According to Meyer's law, there are two agencies that largely influence the growth of human skeleton: *Pressure and Tension.*

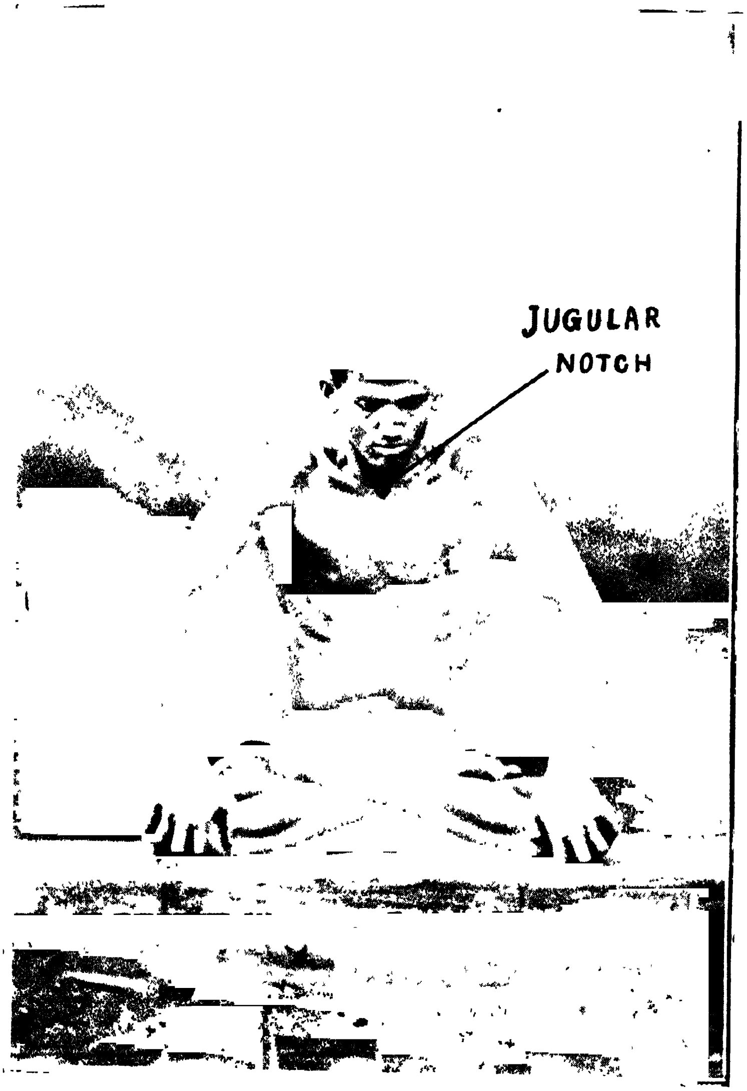
The natural working of this law can be seen in the vertebral column. As pointed out by Jager, in his *Problems of Nature,* the length of each vertebra in child and man is found to increase steadily downward from the second cervical to the fifth lumbar. Reckoning the body-weight as nearly two pounds per inch each vertebra would have less weight to sustain than the one below and more than the one above it. This increase is clearly due to the stimulus of increased pressure Possibly the same law explains the relatively smaller longitudinal growth of the skull which bears no pressure in the skeleton; and the proportionately longer lengthwise development of the lower extremities which have to bear the whole body-weight.

Though the ancient Yogins did not enunciate Meyer's law, they seem to have had a working knowledge of the same for they have invented practices which operate according to the law.

S'īrshāsana (see Fig. LI) is one of the practices in point. Here the skull which normally bears no physical weight, is made to support the whole somatic frame and thus get a large pressure stimulus. The different vertebræ of the spinal column are, in this pose, inversely burdened; and thus those that have, in the erect position, a weaker pressure stimulus, get a proportionately stronger one and vice versa.

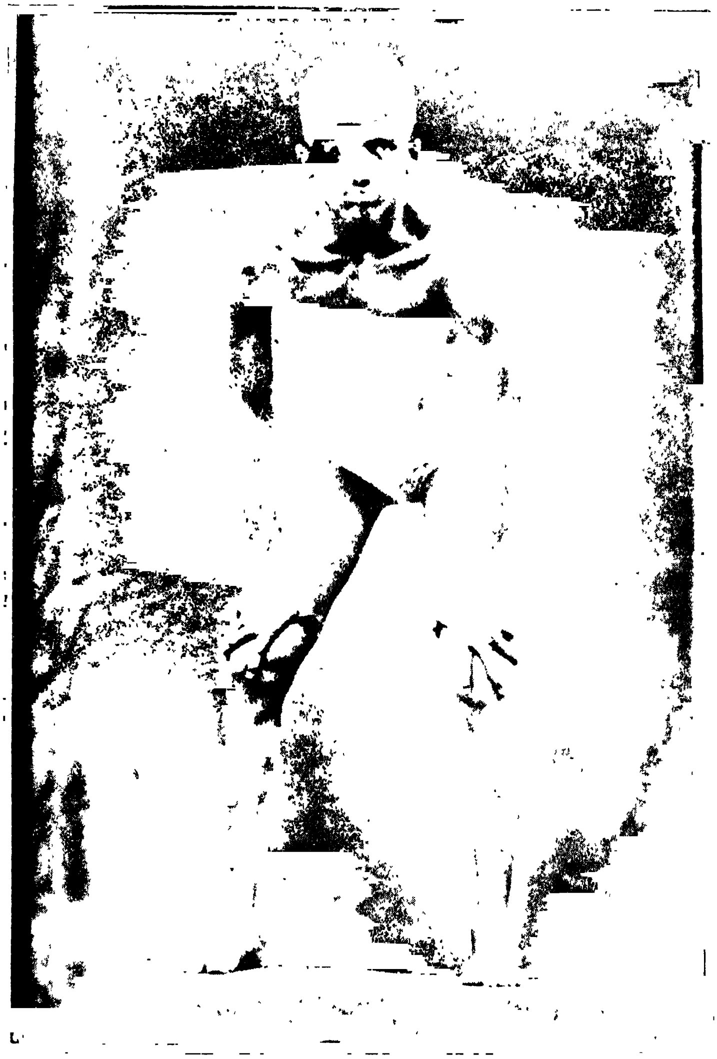
Another pose working under the same law is Vṛikshāsana (the Tree Pose) In this position the whole physical weight is thrown on one leg just as the whole burden of a tree is thrown upon its trunk. The other leg is folded

Fig. LXXIII



Uddiyāna.

Fig. LXXIV



Vāma Nauli

or

The Left Aspect of Nauli.

along the thigh. This is obviously to give additional pressure stimulus to the lower extremities.

It is a well known physiological law that stimuli evoke the best functional reaction when the vibrating currents are repeatedly sent through the tissues of an organ. Yogins have excellent practices for giving repeated pressure stimulus to the vertebræ of the spinal column, both upward and downward, and thus to develop the bone tissue lengthwise. Uḍḍiyāna (see Fig. LXXIII) is one of these practices. Here on the abdominal side, the muscles of this part are pressed in well under the ribs after a thorough exhalation. Then on the back side an upward pull is given to the latissimus dorsi and the trapezius, this effort being supplemented on the anterior side by a further inward and upward pressure of the rectus abdominis so as to produce the concave appearance shown in the picture. (Fig. LXXIII.) This external muscular effort pulls the diaphragm into an extreme convex position on the thoracic side. Thus all the muscles —external and internal, that hold the backbone in its place give a steady upward pull to its bony parts which are stimulated by this pressure.

An exactly opposite effect is produced by the exercise called Nauli. This exercise is best performed in the position shown in Fig. LXXIV. The latissimus dorsi or broad muscle of the back and the trapezius apply a steady downward push, the former at the same time giving a forward thrust, with the help of the lowering diaphragm, to the intestines, so that they are huddled up and stand bulging out under the isolated abdominal muscles. In Fig. LXXIV the left rectus abdominis, the straight muscle of the belly, has been isolated and rolled off to an extreme position. The right cord may also be manipulated similarly, or the two cords may be made to stand side by side in the middle, presenting the appearance of a wall stretching across the belly from the sternum to the pubic bone. This exercise exerts a downward pressure on the vertebræ and through it stimulates them. The two exercises Uḍḍiyāna, and Nauḷi may be performed alternately with great advantage, because of the strong stimulus that would be given to the bones by the successive pull and push of the muscles, thus helping their longitudinal growth.

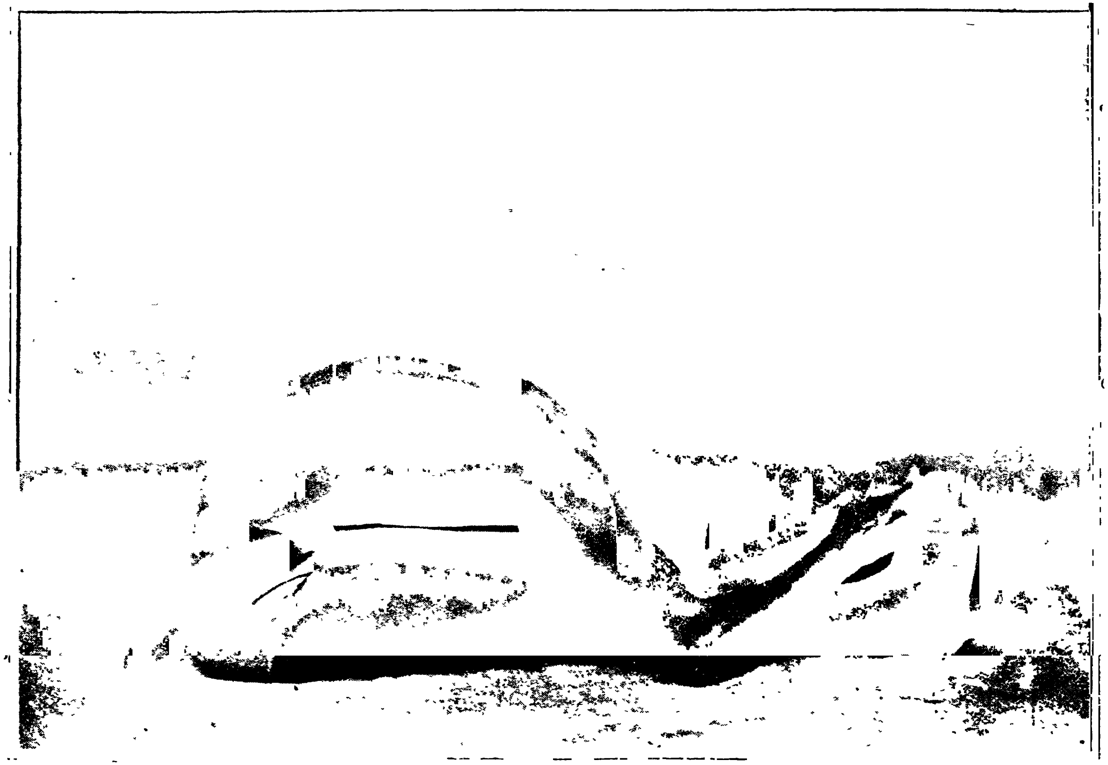
Their are other exercises also which pull and push vertebræ in rapid succession and are performed much more easily than those given above. So it will be amply clear to everybody that the ancient Yoga teaches scientific exercises for the longitudinal growth of the trunk by pressure-stimulus and thus helps human beings to increase their stature.

Equally interesting are the Yogic exercises that stimulate the lengthwise growth of bones through *tension.*

This tension is muscular. The bones of the human skeleton are kept in position by muscles. These muscles are perpetually exerting a pull on them which is one of the stimuli under which the bones grow. So far as the extremities of the body are concerned, the flexorstry to flex them in their joints, whereas their action is counteracted by the extensors which keep these parts from closing upon themselves. Here the biceps act as the flexors and the triceps as the extensors, in the case of the knee-joint, the place of triceps being taken by the quadriceps. The psoas and the iliacus act as the flexors, and the gluteus maximus and others as the extensors between the trunk and the thigh. The latissimus dorsi and the trapezius keep the thorax and the head from curving forward and serve as it were as extensors, the rectus abdominis serving as it were as a flexor for the spinal column. Thus on both the sides of the bones, there are muscular pulls which help the bones to grow under tension stimulus.

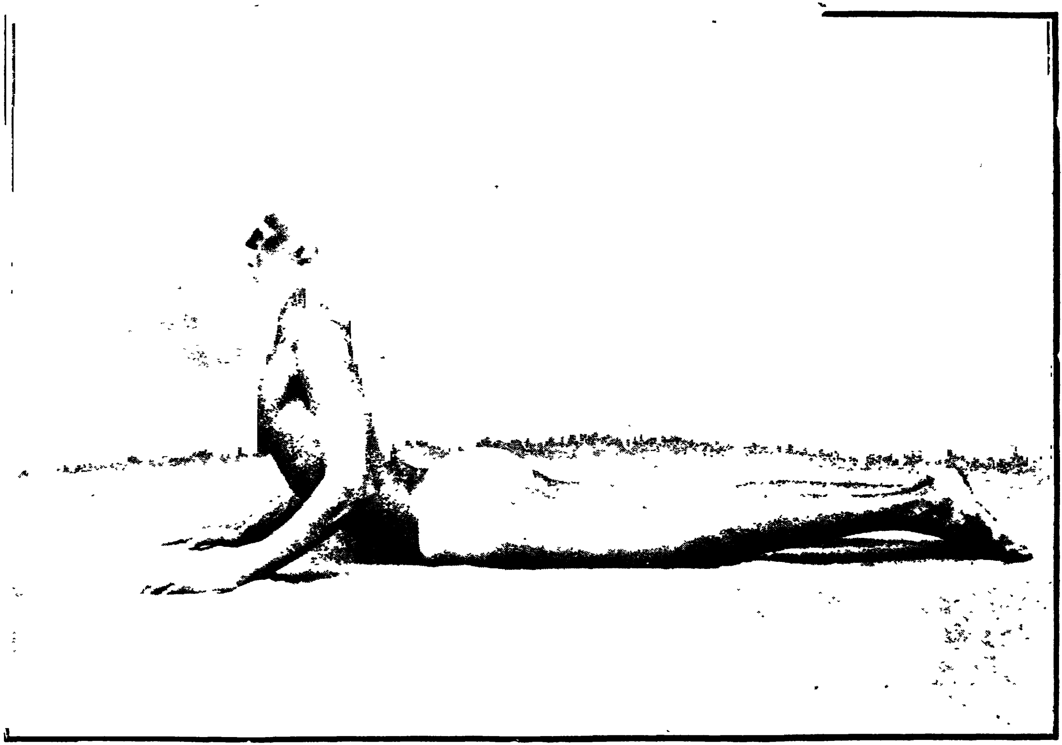
Now in order that this tension may be exerted in due proportion, the muscles should remain elastic and healthy. This health is secured in Yoga by various postures which stretch all the different muscles of the body and keep them perfectly elastic. A scientific study of the different poses shows very clearly, however, that Yogic

Fig. LXXV



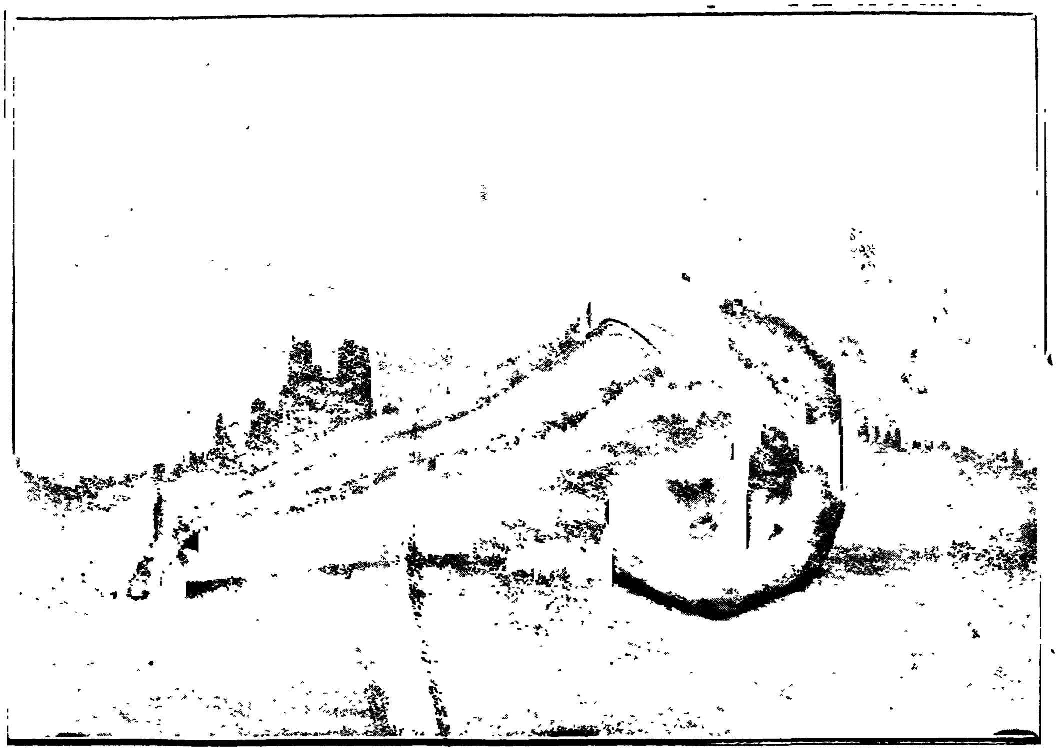
Pas'chimatāna
or
The Posterior-Stretching Pose.

Fig. LXXVI



Bhujāngāsana
or
The Cobra Pose.

Fig. LXXVII



Halāsana
or
The Plough Pose,

physical culture aims at making the flexors more elastic than the extensors, so that the whole frame may easily stand erect. All these stretching exercises increase the muscular tension on the bones and thus stimulate them to growth.

Figs. LXXV, LXXVI and LXXVII represent three typical stretching poses in Yoga. They are respectively called Pas'chimatāna, Bhujangāsana and Halāsana. The first two poses stretch nearly all the important flexors of the human body except those of the upper extremities The extensors are also stretched but their interest is subordinated to the flexors. Muscles controlling the backbone are paid the highest attention. The last two poses (Figs. LXXVI & LXXVII) are very fine exercises for the latissimus dorsi and the trapezius. They stretch every one of the vertebræ of the spinal column posteriorly as well as anteriorly and thus help their development.

It has been stated that the vertebræ are separated from one another by cartilages which serve as cushions. Now these cartilages are much softer than the bones, and if they are constantly made to bear the weight of the body, they would soon be flattened and get out of order. The erect position which the man has assumed, has very greatly taxed these cartilages; and he has to relieve them every day by lying down for hours during sleep. It is, however, to the interest of these soft structures that they should be more effectively relieved than in sleep, and this is best done by the stretching exercises as shown in the Figs. LXXVI & LXXVII. S'īrshāsana also disburdens them to a large extent and helps them to health, and elasticity. The growth of these cartilages adds to the height of man.

The ligaments that bind the vertebræ are fibrous tissues and can be kept healthy and elastic by vibrations sent through them in rapid succession. Exercises shown in the Figs. LXXIII and LXXIV are best calculated to give them a good tone. The stretching exercises also are very vitalising and can keep them perfectly elastic.

The increased muscular action induces a richer supply of blood to the parts exercised. Thus both the periosteum and the endosteum get a liberal quantity of blood and build healthier bones.

To sum up, the exercises noted here are physiologically sound; and are, in every way, capable of increasing human height. These should, however, begin just after puberty, because at that age the bone-building activity is unusually great, and the increased volume of blood makes extensive physiological work possible. As the skeleton reaches maturity in the fifth decade, these practices may be available *at least* up to the fiftieth year. Even a pauper can take to them, for they do not require any of the costly appliances recommended by other systems of physical culture.

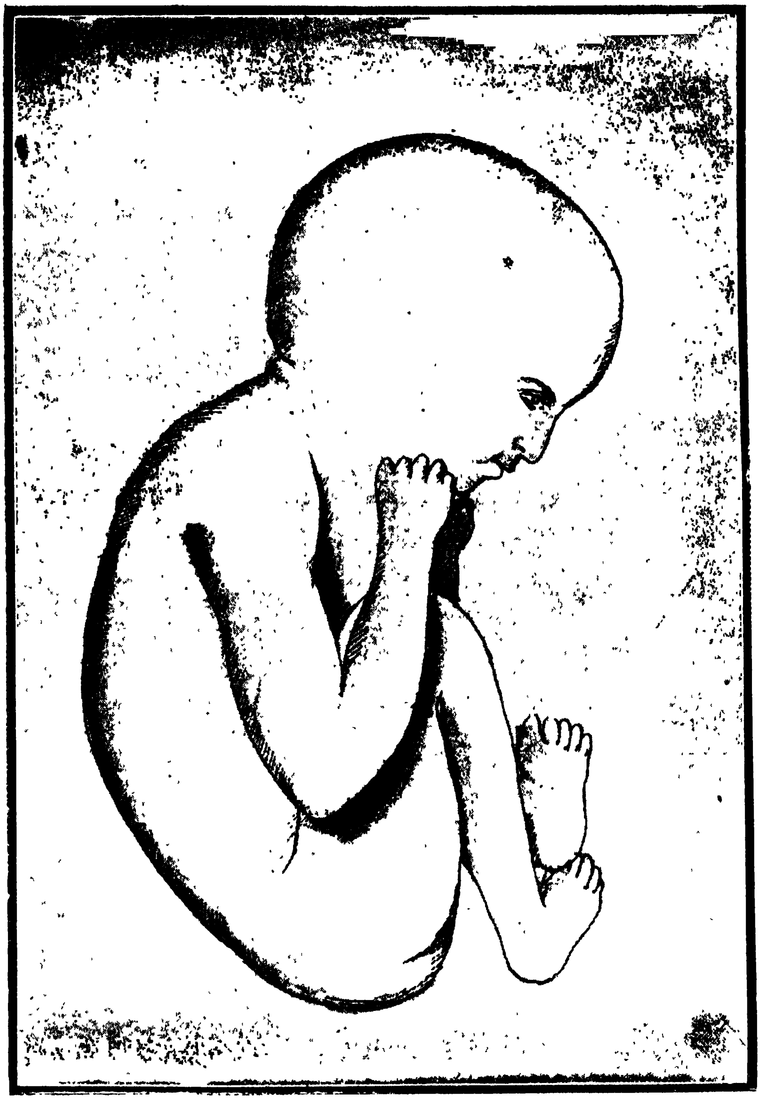
We have based our arguments on physiological laws, without making any reference to the effects of these exercises on the nervous system. In doing this, we have omitted the best of our arguments and the most characteristic feature of the Yogic culture. But this course has been purposely followed. A clear understanding of the working of these Yogic practices with reference to the nerves, would have required elaborate exposition transcending the limits of the present article.

Though it would be somewhat beyond the scope of this article, to enunciate the general principles of Yogic physical culture, as only a few exercises are discussed here from a particular point of view, we cannot withstand the temptation of closing this article with a quotation from a learned author which very beautifully describes some of the fundamental laws that the ancient Yogins followed in evolving their system on the side of physical culture. The original passage bears on a system different from Yoga; but it very adequately expresses some of its basic ideas, and may help the reader to better understand the present exercises.

"One of the important aims was to relax the flexor and tone up the extensor muscles and to open the human form into postures as opposite as possible to those of the embryo

Continued on page 154.)

Fig. LXXVIII



The Embryo

Miscellaneous

Continued from page 152.)

which it tends persistently to approximate in sitting, and in fatigue and collapse attitudes generally. (Compare Figs. LXXVIII and LI.) The head must balance on the cervical vertebræ and not call upon the muscles of the neck to keep it from rolling off; the weight of the shoulders must be thrown back off the thorax ; the spine be erect to allow the abdomen free action; the joints of the thigh extended; the hand and arm supinated etc. Bones must relieve muscles and nerves. Thus an erect, self-respecting carriage must be given, and the unfortunate association, so difficult to overcome, between effort and an involuted posture must be broken up. This means economy and a great saving of vital energy. Extensor action goes with expensive, flexure with depressive states of mind ; hence courage, buoyancy, hope, are favoured and handicaps removed. All that is done with great effort causes wide irradiation of tensions to the other half of the body and also sympathetic activities in those not involved: the law of maximal ease and minimal expenditure of energy must be always striven for, and the interests of the viscera are never lost sight of."

A PRESS NOTICE

PREMA

Tungabhadra. January, 1926.

'We have thus far received three issues of 'Yoga-Mimansa'. For a long time 'Hatha Yoga' the unique science of psycho-physical perfection known to the Indians, especially Yogins, has been neglected. Pseudo-philosophers mistaking intellectual conclusions for spiritual realization, even went to the extent of putting Hatha Yoga down as useless, and even irreligious. In their one-sided talk, not certainly vision or experience, asserting the spirit is all, they even went to the extent of abusing the body by neglecting its laws, forgetting that spirit embodied can realize itself only with the help and sanction of a healthy body.

The theory of psycho-physical parallels and research in that field have been engaging the minds of Western scientists and psychologists of late. They are convinced that various centres of the brain have parallels in the periphere and that a scientific stimulus of peripheral centres unfailingly taps the corresponding centres of the brain. Hatha Yoga, ages ago, was practised in India to affect this function by the Indian Yogins. The exercise it gives to the body and the discipline it gives to the mind are matters any layman can understand. But its power to rouse and control the psychic parallel by physical stimulus is a thing that was particularly used by the Yogins to grow intuitive in a developed body and through intuition (Vijnana) realized the Atman. But as a gulf intervened between the spiritual and the secular, by and by both degraded with the result that India is what it is today - a beggar at the doors of the West. The revival of physical and spiritual culture none can gainsay is the only way of rejuvenating the country. And in either of these, India has not much to learn from foreign countries. Yoga-Mimansa promises fair to bring about this great revival by strenuous efforts to popularize Hatha Yoga of old by proving its method to be perfectly in tune with Modern Science also. It is well got up, beautifully illustrated, and scientifically arranged. No words can sufficiently commend it to the public. We sincerely pray for its success.'

RULES AND REGULATIONS

for

PATIENTS & VISITORS

1 It is desirable for every gentleman that comes to stay in the Ās'rama even for a day to have his own bedding.

2 Being a hill station Lonavla is generally cool throughout the year. It is desirable, therefore, for every one coming to the Ās'rama to have sufficient warm clothing with him.

3 As Lonavla records an average rainfall of 175 inches per year, practically all therapeutical work is suspended from the beginning of July to the middle of September. Patients are, therefore, requested not to venture an expedition to this place during the months noted above.

4 To avoid inconvenience to himself and to the management of the Ās'rama, it is desirable that an intending guest should send beforehand precise information regarding the time of his arrival and the probable period of his stay. If any special arrangements of food, etc. are necessary the facts should be clearly intimated.

5 The Ās'rama is strictly for vegetarianism. No non-vegetarian food or tonic would be allowed within the limits of the Ās'rama.

6 Tea and smoke are entirely prohibited within the precincts of the institution.

7 It is desirable that every gentleman coming to the Ās'rama should, as far as possible, conform to the discipline of this place. No unholy act or word should disturb the peace of the Ās'rama.

8 Boarding and lodging are given free of charge, for the first two days, to every one coming to the Ās'rama.

Should any one overstay this period, he is charged rupees 45 per month from the date of his arrival for his actual expenses. These charges should be paid in advance.

9 The servants of the Ās'rama look to the ordinary needs of a patient or a visitor. Should any one want special menial attendance, he must bring his own servant who will be charged for his actual expenses as well as his master.

10 The concession for the first two days is general. Should a gentleman, however, wish to pay even for these days, the money will be thankfully accepted.

11 No concession can be allowed to anybody absenting himself from the Ās'rama for a day or two. If, however, this period exceeds two days, he will be charged only eight annas per day for the period of his absence, provided he intimates the authorities beforehand.

12 Persons intending to leave the Ās'rama should kindly intimate beforehand the time of their departure.

13 The Ās'rama is being conducted with a religious sentiment. The management is, therefore, always anxious not to be mercenary. Gentlemen coming to the Ās'rama are requested to appreciate this attitude and not to introduce any unpleasant monetary discussions in their dealings with the authorities.

14 The Ās'rama stands for Yoga and Yoga alone. It is hoped, therefore, that the facilities given here will not be used for any other purpose by looking upon the institution either as a general sanitarium or health home.

15 No fees are charged for Yogic instruction.

16 All Yogic treatment and consultation is given gratis.

17 The Ās'rama undertakes to treat only chronic patients who are not confined to bed. If, however, any acute symptoms develop after a patient is admitted to the

Ās'rama, he will get competent medical advise and attendance quite gratis, but will have to pay a moderate charge for the treatment he receives.

18 There is no accommodation for females. They may, however, come for a few hours for consultation and also for instructin if so advised.

NOTE—

Lonavla is a big railway station on the main line of the G. I. P. Railway running from Bombay to Poona some eighty miles away from the former. The Ās'rama is situated at a distance of a little more than a mile from the station. Conveyances are always available at the station by day time. Should a stranger, however, wish to walk down the distance, he can very easily do it, first by inquiring for the Bombay Poona Road and then by tracing the Ās'rama with the help of the signboards which are placed along the said road at convenient distances. Failure to succeed in this enterprise should direct the pedestrian to the local Post Office for more exact and detailed information.

RUGṆĀ SEVĀ MANDIRA

or

THE YOGIC HEALTH RESORT

A regular Yogic hospital under the name of Rugṇa Sevā Mandira will *formally* start work in January 1927. It will be housed in a separate bungalow just near the Ās'rama. Nine beds will be arranged and only as many patients will be admitted to the Sevā Mandira, overcrowding being strictly avoided.

Though the *formal* work is to begin in January coming, patients will be given advantage of this arrangement *informally* from October next. As the number of beds is limited, it is desirable for the intending patients to know beforehand whether accomodation is available. Rules and Regulations for the Yogic Health Resort will soon be published. Till then those printed on the three preceeding pages will continue to be in force.

तदेकोऽवशिष्टः शिवः केवलोऽहम् ।
I alone persist: Blissful: Absolute.

सर्वं खल्विदं ब्रह्म ।
All this is, indeed, Brahman.

ॐ

सोऽहम् ।

Yoga-Mīmāṅsā

EDITED BY

S'RĪMAT KUVALAYĀNANDA

(J. G. Gune)

July, 1926

Vol. II No. 3

KAIVALYADHĀMA
Post-Lonavla
(Bombay, India).

नेह नानास्ति किञ्चन ।
There is nothing here apart from it.

शरीरमाद्यं खलु धर्मसाधनम् ।
Surely Health is the primary requisite of spiritual life.

[*All rights reserved*]

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ॐ

तदेकोऽवशिष्टः शिवः केवलोऽहम्।

सोऽहम्।

YOGA-MĪMĀṄSĀ

VOL. II JULY, 1926 NO. 3

Editorial Notes

MAY the Maker of all make this journal a success. Blessed is the name of the Lord. May he bless the workers of the Ās'rama with a happy and prosperous career as servants of the world which is only the Lord Himself objectified. May He, that has created us in His infinite wisdom, lead us to the light that is beyond all darkness.

* * *

WE are very glad to bring to the notice of our readers a letter addressed to us by M. Careveth, the General Secretary of the International Organization for Psychical Research, Paris. In doing this we have two objects in view. The first object is to give the widest circulation to the wishes of M. Careveth, through our readers; and the second is to record our sense of obligation to the gentleman for using very kind expressions for our Ās'rama and its work.

On the 9th of September 1927, the International Congress for Psychical Research is to meet in Paris. It is the sincere desire of the General Secretary that advanced Yogins and spiritual culturists of India should take an active part in this Congress. He says in his letter that the western scientists are still in doubt about the supernatural phenomena such as *lavitation, materialisation* etc.; and he further states that, in his opinion, the doubt can best be removed by a regular demonstration of these spiritual feats at the Paris Congress. He is expecting a large number of scientists to attend the Congress and if they get an opportunity to witness these spiritual performances, M. Careveth thinks, they will be convinced of the truth of psychic powers. He is, therefore, in earnest search of people from India that can be exhibited at the Congress.

We have to request our readers to appreciate this attitude of M. Careveth towards India and try their best to put him in touch with people capable of giving such performances. Whether these spiritualists are willing to be exhibited at Paris or not is immaterial. M. Careveth will try his best to get at them and do the rest. For the information of those that may want to communicate with the General Secretary, we are giving here his address.

M. Careveth,
General Secretary, Society for Psychical Research,
89 Avenue Niel, PARIS XVII.

Intending correspondents are requested to write directly to M. Careveth.

* * *

WE offer our heartfelt thanks to M. Careveth for the keen interest he is taking in Indian spiritual culturists. Our special thanks are due to him for the kind reference he has made in his letter to our Ās'rama. He says—

" During my visit in India last year, I met many of your most prominent men and obtained a very high opinion of your present work on scientific lines. As your institution, as far as I know, is the only one of the Yoga schools in India, that wants callaboration with western scientists, I should be very pleased if you were able to send some delegates to next year's Congress in Paris. "

* * *

HOWSOEVER anxious we may have been to get into *direct* touch with the western scholars in general and the western scientists in particular, we are afraid, the policy of the Ās'rama may not allow us to respond to this call of the General Secretary. Our institution is ever open to any student of spiritual culture that seeks guidance from us. But we are against any exhibition of spiritual phenomena, *unless* they are accompanied by their scientific explanations. Upto now a few psychical feats have already been exhibited in the west. But the spiritualists failed to make the *necessary* impression upon the western scientists simply because no scientific interpretations were offered of the demonstrations given. The western scientists in general are too busy to spare time for scanning the psychic phenomena. If they are to be attracted, their scientific instinct must be appealed to. It is for these reasons that the Ās'rama wants every demonstration of Yogic feats, whether psychic or physical to be followed by their scientific explanations. The work of the Ās'rama is yet in its infancy. It will take some time before we are in a position to offer scientific interpretations of the psychic phenomena. So, as we have said above, we may not be able to avail ourselves of the kind invitation of M. Careveth. Our sense of obligation for his solicitude remains the same, however.

* * *

WE have great pleasure in expressing our indebtedness to Dr. A. L. Nair of Bombay for throwing open to us the use of his X-Ray department absolutely free of charge. Dr. Nair is the founder and proprietor of the famous N. Powell & Co. in Bombay. Instinctively pious, he is known for his large-heartedness. Dr. Nair has founded the Bombay Buddha Society of which he ever continues to be the very soul. He is running a big charitable hospital in the sacred memory of his worthy mother. So it is quite in keeping with his magnanimity, that Dr. Nair should have appreciated our work and given us the facilities referred to above. The department is well equipped and is sure to be of great help to us in our research work.

* * *

OUR sense of obligation to Dr. Joshi, the X-Ray expert in charge Dr. Nair's X-Ray department, is equally great. Equipped with foreign training, Dr. Joshi is wellknown in this presidency for his knowledge of X-Ray. He is taking keen interest in our work and his co-operation has been a valuable asset for the Kaivalyadhāma. We offer our heartfelt thanks to both, Dr. Nair and Dr. Joshi, for all the kindness they are showing us in our work.

* * *

AS announced in our last issue, the Rugṇa Sevā Mandira or the Yogic Health Resort, started its formal work in the last month. Patients are now accommodated in a snug and comfortable bungalow situated in a healthy locality away from the thickly populated town. We personally supervise the Sevā Mandira and try to give every comfort, to our patients.

* * *

AS the Director of the Ās'rama, we have to say a few words again to our visitors. In spite of our repeated requests to pay attention to the rules and regulations published in the Yoga-Mīmāṅsā from time to time for the information of our visitors, casual or otherwise, they continue to come here without the necessary equipment. Lonavla is cool all the year round. Even a healthy person requires ample clothing for his stay at this hill-station. Hence visitors coming with scanty clothing have to suffer. We have, therefore, again to request our visitors to get with them the necessary supply of clothing when thay think of visiting Lonavla even for a day.

* * *

SOME of our readers will be disappointed to miss our discussion on the sponteneous emissions even in this issue. As we had to accommodate two lengthy articles in this number, we could not find place here for the promised discussion. We hope to treat the subject at length in our next issue.

* * *

WE cannot close these notes without saying a few words about our article on 'The Rationale of Yogic Poses.' In order to make clear to our readers the general principles underlying the system of Yogic poses, it was necessary for us to take a bird's-eye view of the whole science of Yogic physical culture. The latter, again, had to be compared and contrasted with other systems obtaining in the same field. In instituting comparisons, we might have used words that may not be quite pleasing to the advocates of different systems. We, therefore, request our brethren not to misunderstand our statements. The criticism has been made in the interest of the culture for which they stand and has absolutely no foundation in personal prejudices. We appreciate every honest endeavour and wish it success from the bottom of our heart.

* * *

IN our next issue we hope to complete our article on 'The Rationale of Yogic Poses'.

N. B.—Those of our readers that claim no acquaintance with anatomy and physiology will do well to read the Semi-Scientific Section first.

The Scientific Section

SYSTEM OF TRANSLITERATION

Letters, their sounds and a description of these sounds :—

अ	A	Pronounce	‘A’	like	‘u’	in	‘but’.
आ	Ā	„	‘Ā’	„	‘a’	„	‘far’.
इ	I	„	‘I’	„	‘i’	„	‘pin’.
ई	Ī	„	‘Ī’	„	‘ee’	„	‘feel’.
उ	U	„	‘U’	„	‘u’	„	‘fulsome’.
ऊ	Ū	„	‘Ū’	„	‘oo’	„	‘wool’.
ऋ	Ṛi	„	‘Ṛi’	„	‘rö’	„	German.
ॠ	Ṝi	„	‘Ṝi’	„	„	„	„ with a strong accent.
ऌ	Ḷi	„	‘Ḷi’	„	‘lö’	„	German.
ए	E	„	‘E’	„	‘a’	„	‘fate’.
ऐ	AI	„	‘AI’	„	‘ai’	„	‘aisle’ but not drawled out.
ओ	O	„	‘O’	„	‘o’	„	‘over’.
औ	AU	„	‘AU’	„	‘ou’	„	‘ounce’ but not drawled out.
क	KA	„	‘K’	„	‘k’	„	‘kill’.
ख	KHA	„	‘KH’	„	‘kh’	„	‘ink-horn’ or like ‘ch’ in ‘Loch’ (Scottish).
ग	GA	„	‘G’	„	‘g’	„	‘girl’.
घ	GHA	„	‘GH’	„	‘gh’	„	‘log-house’ or ‘ghee’.
ङ	N̄A	„	‘N̄’	„	‘n’	„	‘king’ or ‘link’.
च	CHA	„	‘CH’	„	‘ch’	„	‘church’.
छ	CHHA	„	‘CHH’	„	the second ‘ch’	in	‘churchill’
ज	JA	„	‘J’	„	‘j’	in	‘join’.
झ	JHA	„	‘JH’	„	palatal ‘z’	as in	‘azure’.
ञ	N’A	„	‘N”’	„	‘n’	in	‘pinch’.
ट	ṬA	„	‘Ṭ’	„	‘t’	„	‘tub’.
ठ	ṬHA	„	‘ṬH’	„	‘th’	„	‘pot-house’.

SYSTEM OF TRANSLITERATION

Letters, their sounds, and a description of these sounds:—

ड	ḌA	Pronounce	'Ḍ'	like	'd'	in	'dog'.
ढ	ḌHA	„	'ḌH'	„	'dh'	„	'mad-house'.
ण	ṆA	„	'Ṇ'	„	'n'	„	'splinter' or 'and'.
त	TA	„	'T'	like dental 't' as in 'thin', or like the French 'T'.			
थ	THA	„	'TH'	„	'th'	in	'thunder'.
द	DA	„	'D'	„	'th'	„	'then'.
ध	DHA	„	'DH'	„	'th'	„	'this'.
न	NA	„	'N'	„	'n'	„	'no'.
प	PA	„	'P'	„	'p'	„	'paw'.
फ	PHA	„	'PH'	„	'ph'	„	'top-heavy', or 'gh' in 'laugh'.
ब	BA	„	'B'	„	'b'	„	'balm'.
भ	BHA	„	'BH'	„	'bh'	„	'hob-house'.
म	MA	„	'M'	„	'm'	„	'mat'.
य	YA	„	'Y'	„	'y'	„	'yawn'.
र	RA	„	'R'	„	'r'	„	'rub'.
ल	LA	„	'L'	„	'l'	„	'lo'.
व	VA	„	'V'	„	'w'	„	'wane'.
श	S'A	„	'S''	„	'sh'	„	'ashes'.
ष	SHA	„	'SH'	„	a strong lingual with rounded lips.		
स	SA	„	'S'	„	's'	in	'sun'.
ह	HA	„	'H'	„	'h'	„	'hum'.
ळ	ḶA	A dento-lingual pronounced with a little rounding of lips.					

Visarga—Ḥ; Nasalized म् as in संयम—ṁ;

Nasalized न् as in मीमांसा—n.

DHAUTI

DHAUTI is one of the six Yogic processes recommended to the unhealthy* for making their bodies fit (physiologically balanced), so that they may sustain the working of the spiritual forces undisturbed and may help their growth. It consists in cleansing the stomach internally by means of a cloth.

THE TECHNIQUE :—

The cloth should be, according to the Yogic tradition, three inches in breadth and twenty-two and a half feet in length. The piece used for this purpose is itself called Dhauti. It has been illustrated in rolled and unrolled conditions in Figs. LXXIX and LXXX respectively. It is desirable that the cloth has a delicate texture. Finely woven cotton fabrics like muslin are just the types suitable for this purpose. Some people look to be under the impression that they could use a piece of coarse cloth, if they reduced the breadth of it, thus keeping up the necessary breadthwise volume of Dhauti, the narrowness of the cloth compensating for the rough texture. The impression may be logically correct ; but mere logical accuracy is hardly helpful in solving problems of physiology. The fact is that the stomach sits tight upon the Dhauti as soon as it is introduced there. A sort of churning action commences, the muscular walls of the stomach kneading and overhauling the contents held in their grip. Now the delicate mucous membrane that covers the internal surface of the mouth, also covers the internal surface of the stomach. And if the folds of the Dhauti were to consist of rough cloth, the membrane is likely to be damaged by friction. On the contrary if the texture of the Dhauti were to be delicate, this very friction would stimulate the action of the glands situated in the said membrane. Again in the act of swallowing

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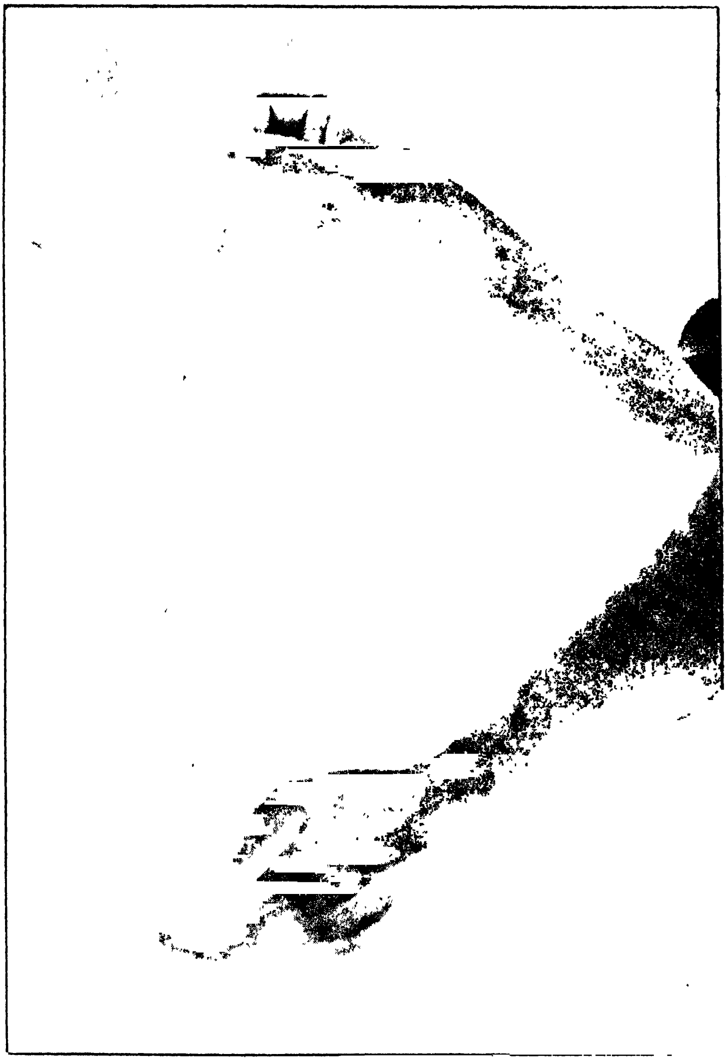
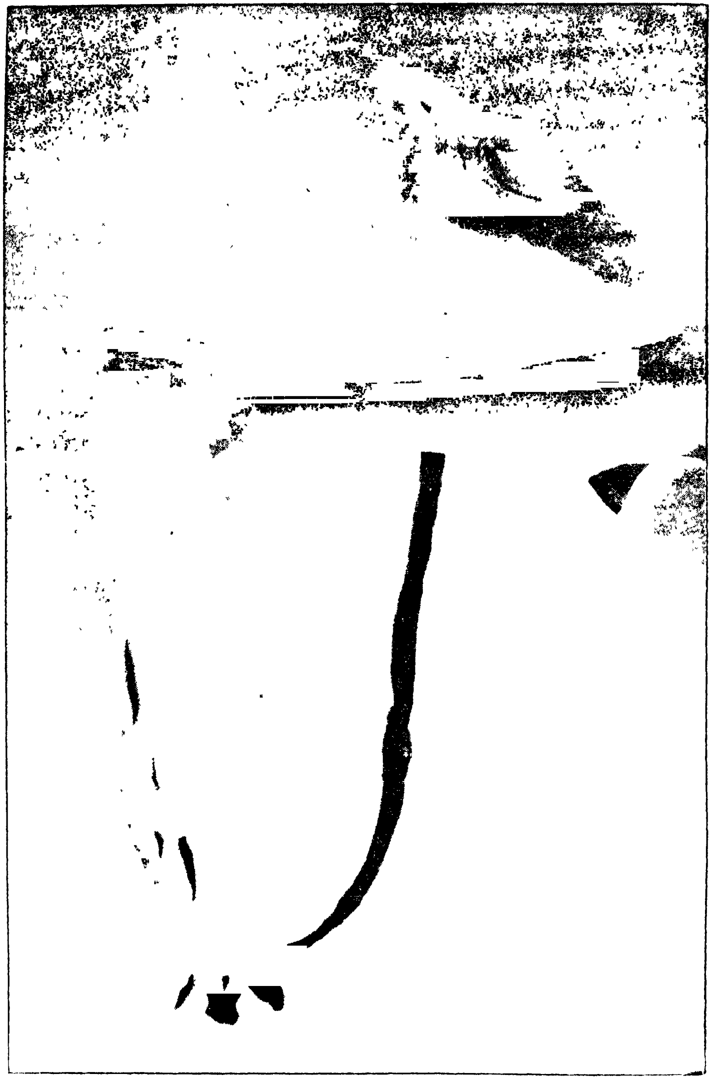
* Unhealthy from the Yogic point of view which requires a perfect balance of physiological forces.

Fig. LXXIX



Dhauti Rolled up.

Fig. LXXX



Dhauti Unrolled for Use.

and withdrawing the Dhauti, the mucous membrane of the throat is constantly rubbed, and as such stands in the danger of being badly scratched, if the cloth were of a coarse texture !

So also it is preferable, at least in the case of a beginner, for the Dhauti to be a continuous piece of cloth, instead of having its length made up by putting together short strips. For howsoever finely the joints be stitched, they are sure to form swellings in the uniform length of the Dhauti and cause greater trouble to the unpractised throat. It is equally necessary to point out that the lengthwise borders of the cloth should be very delicately but neatly stitched, lest the loose threads should get out of the fabric, entangling in their meshes the soft uvula !

The Dhauti thus got ready should be clearlv washed and sterilised, by boiling it for some ten minutes before it is used.

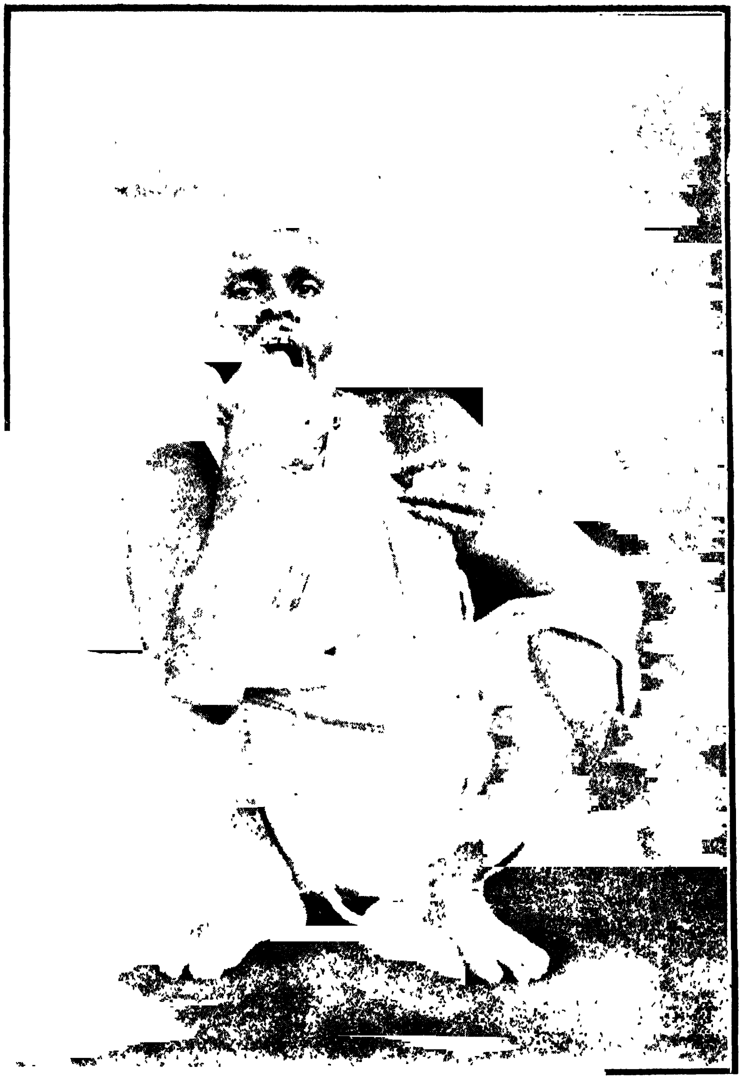
The practice of Dhauti presents little difficulty in the case of ordinary persons, if the thing is approached systematically. Before one starts swallowing the Dhauti, it should either be rolled up as shown in Fig. LXXIX, or should be held in the hand as illustrated in Fig. LXXX, where successive folds would be available for use without there being any entanglement. The student should first examine the whole length of the cloth and should arrange the consecutive folds in such a way that everyone of them would easily come out without the least delay and complication. The best way is to get the Dhauti first rolled up and to unroll it only as it is being used. In order to facilitate swallowing the cloth should first be soaked in water and then lightly squeezed till it stops dripping. The Dhauti should be kept only very moderately saturated with water. If it is deprived of its moisture completely, the cotton cloth would absorb the saliva as soon as it is introduced into the mouth, rendering swallowing most difficult, if not impossible. If too much water is allowed to be there, the saliva would be diluted, again making the act of deglutition somewhat labourious. Hence the necessity of carefully adjusting the moisture of the wet Dhauti at the time of use.

The loose end of the Dhauti is held in the forefinger and the middle one as shown in Fig. LXXX. It is then inserted into the throat as deep as the fingers could, (see Fig LXXXI) and left there to be swallowed by the effort of the apparatus of deglutition, just as one swallows a morsel of food. When the student feels sure that his throat has caught up the Dhauti, he should insert, bit by bit, additional parts of the cloth into his mouth. He might bring them under his teeth with the help of his tongue, and might even chew them as he does his ordinary mouthfuls of food He must, however, work his teeth rather gently lest he should bite the cloth to pieces What is necessary is merely a mock eating, so that the blind machinery of swallowing might deal with the Dhauti as it deals with the ordinary food. It might indeed, hesitate to welcome these dry folds of a tasteless piece of cloth, but a little coaxing would set the matters right; and eating the Dhauti would be as easy as eating bread and butter.

Beginners should not venture too far They should be satisfied even if they could take in only a few inches the first day. Gluttony is to be avoided everywhere. Even so when the dish consists of a piece of cloth. The tender mucous membrane of the throat is constantly rubbed by the Dhauti as it is being forced down the throat which leaves some soreness in the parts subjected to friction. This happens only in the beginning. As the membrane gets accustomed to this sort of rubbing, the soreness disappears; and ordinarily in about a fortnight's time everything becomes smooth and comfortable. Every day additional twelve to eighteen inches of the cloth may be eaten, so that the whole length of the Dhauti can be swallowed in about fifteen days.

In the case of persons of ordinary health, this initiation into Dhauti does not cause much trouble. But people with

Fig. LXXXI



Dhauti Introduced into the Mouth.

irritable throats present considerable difficulty. In many cases the very first touch of the cloth is sufficient to provoke violent coughing ! The eyes are reddened and bedimmed with tears, the nose begins to run, and despair slowly creeps over even an enthusiastic heart ! If after two or three attempts the throat is not the least inclined to show hospitality to the strange visitor, it is desirable that the swallowing apparatus should be induced to do its work by gentler methods than be compelled to action by rough treatment. Instead of soaking the Dhauti in water, it should be immersed in milk. This sweet fluid induces a richer secretion of saliva which in its turn renders the cloth slimy, so that it glides easily down the throat and does not offer much friction against the mucous membrane. If plain milk does not serve the purpose, a small quantity of sugar should be added to it. This generally proves successful, and seasoned Dhauti ceases to be troublesome. After some days' practice the quantities of sugar and milk may be progressively reduced, till at last bare Dhauti can be eaten without much difficulty. This little difficulty is also ultimately overcome by practice.

It must, however, be admitted that in extreme cases nothing can induce the reluctant throat to receive the Dhauti; and the student has to postpone his Dhauti programme, till he gets rid of his irritable throat by some other remedies.

Even in ordinary cases some difficulty is experienced in getting practised to Dhauti. The throat, the œsophagus and the stomach, each of these gets irritated as the cloth reaches it and every now and then the course of Dhauti is interupted by a tendency to throw up the cloth. Under these circumstances, the student is simply to shut his mouth and keep perfectly passive. After two or three spasms, the system becomes ready for further swallowing.

When the whole length can be eaten, the student should carefully reserve a foot of it outside the mouth, so that there remains no danger of the other end being drawn into the stomach. This free end must be available for withdrawing the Dhauti.

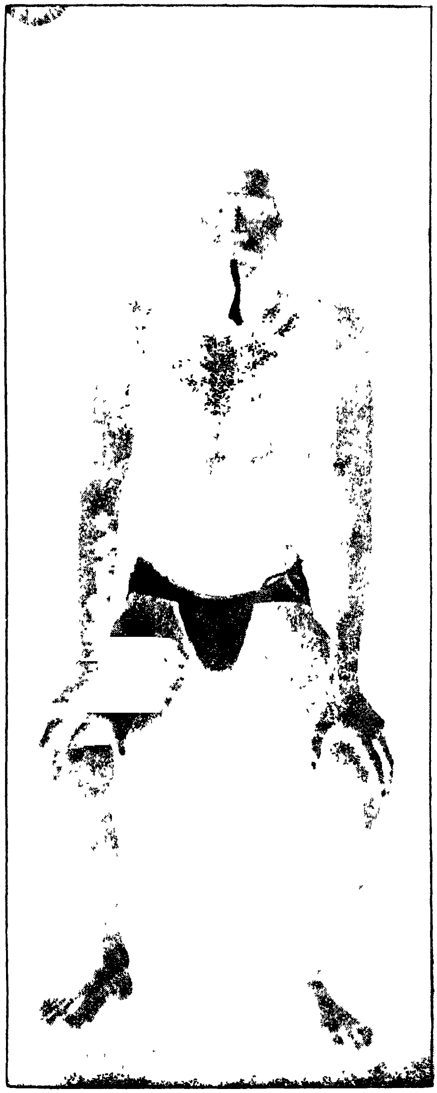
Although Uḍḍiyāna and Nauli do not form an integral part of the Dhauti process, they are traditionally practised while the stomach is still loaded with the Dhauti. We shall now see why this is done.

So far as actual experimentation goes we know only two uses of Dhauti—*absorption* and *massage*. The cotton fabric when introduced into the stomach absorbs fluids collected in the stomach. Generally they are the gastric secretions; but very often free hydrochloric acid and bile which finds its way up into the stomach, are also present. On examination the withdrawn Dhauti indicates this fact. Massage is the other use. The walls of the stomach sit tight on the cloth and churn it by their involuntary actions. Thus the stomach is gently rubbed against the cloth and a sort of massage is done to it. As will be made clear later on when we study the experiments on Dhauti, the utilities of both, absorption and massage, are greatly increased by the practice of Uḍḍiyāna and Nauli.

Yogic texts claim many other advantages for Dhauti. We have certainly some clinical evidence in support of the claim. But we cannot say here anything about those advantages, for we have at present neither any experimental proof nor any rational explanation accounting for the benefits. We are, however, inclined to believe that even in the case of these advantages, the practice of Uḍḍiyāna and Nauli is a help to Dhauti.

Particular people have misgiving over the practice of Uḍḍiyāna and Nauli while the stomach still retains the cloth. They are afraid lest these abdominal movements should throw the folds of the Dhauti into complications, rendering its withdrawal extremely painful and even at times impossible! From our very wide experience in this regard we can assure our readers, that there is absolutely no fear on this score, provided the swallowing process is kept fairly free from violent attacks of vomiting. This freedom is

Fig. LXXXII



Pose for Practising Uḍḍiyāna & Nauli during The Process of Dhauti.

easily secured by approaching the practice systematically and by avoiding all possible haste.

A word about the total time taken for eating the whole length of the cloth and retaining it in the stomach will not be inopportune here. What time one spends in swallowing is immaterial. The student should never allow the Dhauti to remain in the stomach for more than 20 to 25 minutes after the swallowed end first touches that organ. The reason is this. The stomach deals with the cloth as it does with ordinary food. Hence there is every possibility of the eaten end of the cloth being pushed down the pyloric sphincter, if it is allowed to be there for more than the period indicated above. In the third experiment recorded in this issue the Dhauti is to be seen in the duodenum and perhaps even in the jejunum. It is not desirable that the cloth should be allowed to encroach upon the digestive tube so far. Because in withdrawing the same, there is every possibility of the pyloric sphincter being injured. All undue retention would be avoided, if the student took something like a fortnight of daily practice to consume the whole length; and every day attempted only as much as he could accomplish without much trouble.

The pose appropriate to the practice of Uḍḍiyāna and Nauli during the process of Dhauti has been illustrated in Fig. LXXXII.

Withdrawal of the Dhauti does not require many instructions. The cloth becomes so slippery that it can be easily pulled out. But even in this procedure care must be taken not to injure the throat by violent jerks. A gentle pull with a gaping mouth is always recommended. If the cloth is held back, as it sometimes is the student is simply to retract a few inches of it and, with his mouth shut up, to keep perfectly passive for a few seconds. The whole thing will adjust itself and withdrawal will be smooth.

In withdrawing the Dhauti, both the hands should be used alternately. The cloth as it is being pulled out, should be collected in a basin.

In spite of all the precautions taken in practising Dhauti, if the student finds his throat considerably sore, he should suspend his Dhauti-work for a few days according to the needs of the case. When he finds himself normal he should again start his programme. Generally there will be little occasion to observe this rule.

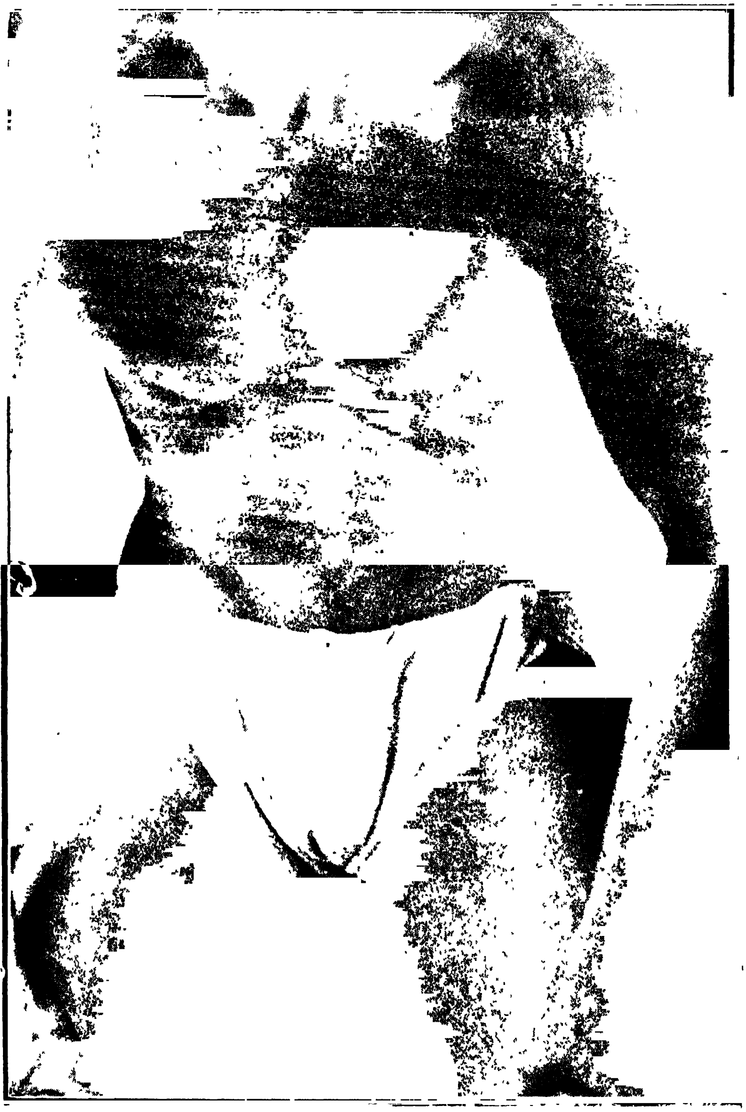
GENERAL :—

We cannot too much insist upon great care being taken of the Dhauti cloth. As soon as the daily practice is over, the piece should be cleanly washed with soap and boiled for about ten minutes for being sterilised, It should again be washed with clear water and exposed to dry. In doing this the cloth should be well spread out breadthwise. Drying should be done in a room free from dust-nuisance. Especially in large cities every particle of dust is teaming with microbes ! Dirty villages are not better in any way. If these deadly microbes were deposited on the Dhauti and introduced into the system, it is sure to be dangerous. When students cannot get a room suitable for drying their Dhauti, they should get the cloth sterilised again before the next day's use. When the Dhauti is dried, it should be rolled up, as shown in Fig. LXXIX; and kept clean for further use.

If the piece of cloth is well preserved, it may last even for three months. Much will, however, depend upon the quality of the cloth and the treatment it gets at the hands of the eater. The best way is to use the same piece only so long as it is quite intact and does not show the least tendency to become threadbare. Rats should never be allowed to take liberty with the Dhauti and the cloth should be rejected if it is gnawed by these mischief-mongers !

When the Dhauti is eaten with a reserve of a few inches, and is not allowed to be worn out or gnawed, there is little fear of its either being pulled into the stomach or a part of it being left in there, the strip being snapped off du-

Fig. LXXXVI



Uḍḍiyāna in Standing.

ring withdrawal. If per chance, however, this sort of accident happens, the student should not be alarmed. He should immediately take some emitic and he will at once vomit out the piece of the Dhauti. The best emitic that would be available in every household is the common salt. A concentrated solution of it measuring 10 to 15 ounces, would serve the purpose.

Morning is the best time for practising Dhauti. The stomach should be empty. Because the irritation caused by the piece of cloth sets in violent anti-peristalsis and stomach contents would be instantaneously vomited. Even if the stomach is empty and the small intestine loaded, still the practice would not be satisfactorily done. Because the exercises of Uḍḍiyāna and Nauli are best performed with clean bowels.

A novice should avoid every sour and pungent article of food, till his throat gets rid of all soreness Chillies and tamarind should be strictly avoided. When the throat recovers its usual health, however, even these things may be taken, though on a very moderate scale.

Physiological and therapeutical aspects of this process will be discussed when we will have studied the experiments on Dhauti.

X-RAY EXPERIMENTS ON DHAUTI

EXPERIMENT I

OBJECTS OF THE EXPERIMENT :—

One of the objects of the experiment was to study the normal position of the stomach when a Dhauti pasted with three ounces of barium sulphate was introduced into it through the mouth, with a view to contrast it with its own position under Uḍḍiyāna as illustrated in Fig. LXXXVI. Another object was to know the treatment given to the Dhauti by the stomach under normal conditions, so that the same may be contrasted with the treatment accorded to the Dhauti by the stomach under different Yogic exercises. The third object was to understand the behaviour of the Dhauti in the œsophagus.

PREPARATION OF THE SUBJECT :—

The subject was a youth running his twenty-third year. He was in full enjoyment of health and had a thorough training in Dhauti. On the day previous to the experiment, he took his usual meal at about 12 noon. He had a cup of milk in the evening and a moderate dose of an organic laxative at bed-time. He slept well over night and had a clear motion the next morning. In order, however, to secure complete clearness of the digestive tube the subject had it flushed with four pints of tepid water by means of an enema at about 6 A. M. The experiment started nearly at 9-30 in the morning.

THE DHAUTI :—

As usual a piece of muslin 3 inches wide and twenty-two and a half feet in length with its borders finely stitched up, was taken for being used in this experiment. It weighed 44·5 grammes. As this fine cotton fabric would not cast a shadow under X-Rays, it was covered with barium sulphate in the following way. A concentrated solution was prepared of Indian gum and was mixed with three ounces of barium sulphate, making a thick paste. This paste was spread evenly upon the Dhauti cloth which was subsequently rolled up. Thus the quantity of barium would stick fast to the cloth and inspite of the pressure of deglutition would not be much squeezed out. The paste rendered the cloth opaque to X-Rays and useful for radiographic purposes.

THE EXPERIMENT PROPER:—

At about 9-30 A. M. the subject started swallowing the cloth and finished his operation in about ten minutes. Ordinarily it takes not more than two minutes for an expert to pass the whole piece down the throat; but in the present case the gummy paste rendered the work a little more difficult. We allowed another twenty minutes to pass by so that the stomach might be found fully active in dealing with the Dhauti. At about 10 A. M. the subject was skiagraphed.

For this work he was made to sit on a stool, his legs resting on the ground below. The X-Ray plate was held against his abdomen quite close to it. He was made to incline forward a little and the X-Ray tube was arranged behind his back. The radiograph taken in this position has been shown in Fig. LXXXIII.

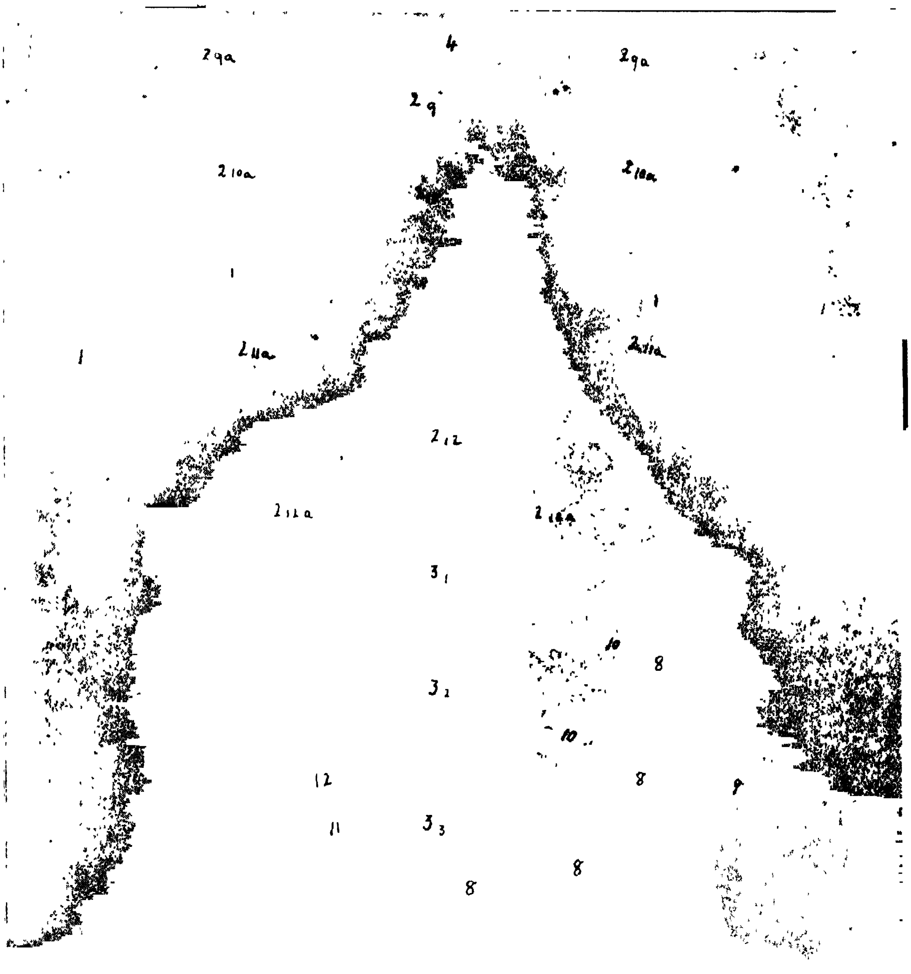
NOTE—

The radiographs printed in this issue were all originally of 12″ × 10″. They have been subsequently reduced to 6″ × 5″ size for the convenience of this journal.

REFERENCES TO RADIOGRAPH I

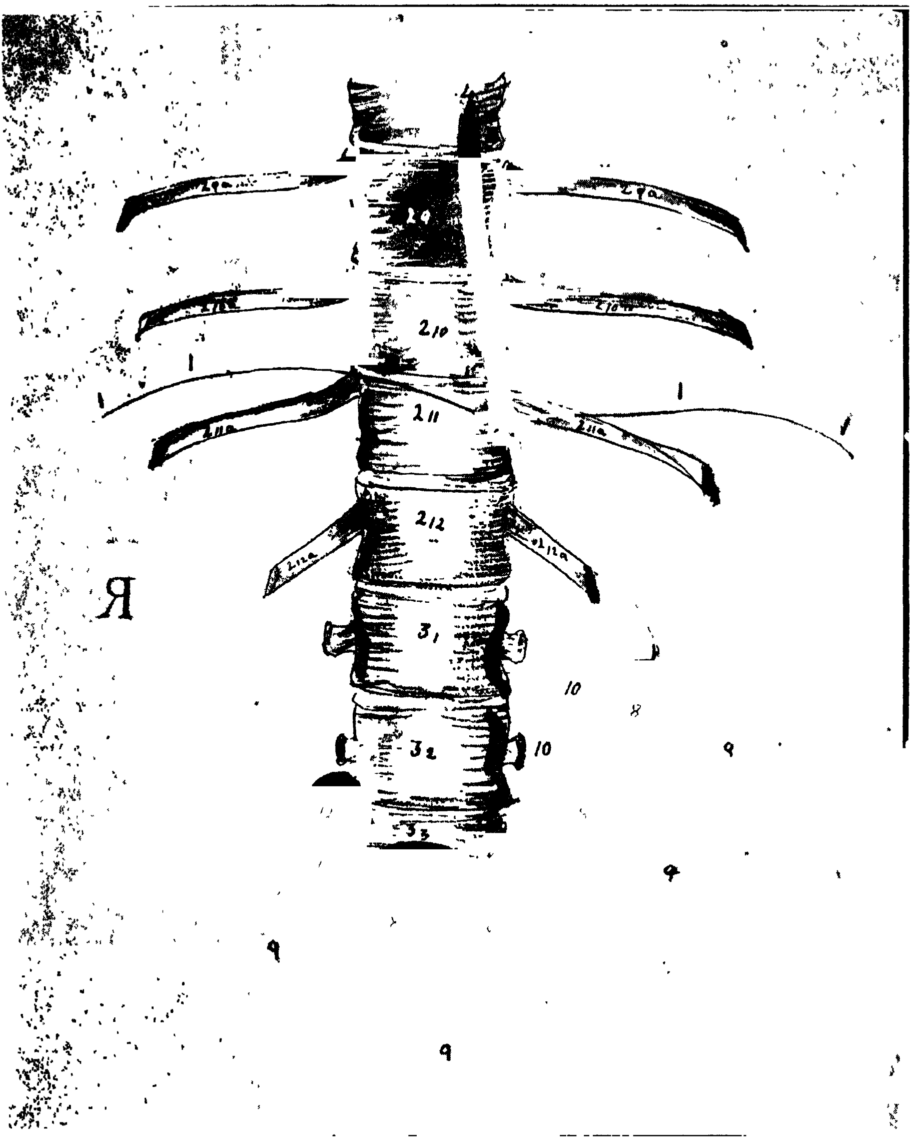
1 The Diaphragm.
2_9 The Ninth Dorsal.
2_{9a} The Ninth Ribs.
2_{10} The Tenth Dorsal.
2_{10a} The Tenth Ribs.
2_{11} The Eleventh Dorsal.
2_{11a} The Eleventh Ribs.
2_{12} The Twelfth Dorsal.
2_{12a} The Twelfth Ribs.
3_1 The First Lumbar.
3_2, 3_3 The Second and the Third Lumbar respectively.
4 Position of the Thoracic Portion of the Œsophagus.
5 Position where the Œsophagus Pierces the Diaphragm
6 Position of the Abdominal Portion of the Œsophagus.
7 Position of the Cardiac Orifice.
8 Dhauti Swallowed.
9 The Greater Curvature.
10 The Lesser Curvature.
11 The Pyloric Orifice.
12 A Part of the Duodenum.
R The Right Side of the Abdomen.

Fig. LXXXIII **Radiograph I**



Normal Stomach
With
Dhauti Swallowed.

Fig. LXXXIIIa



Line Drawing of Radiograph I

REFERENCES TO RADIOGRAPH I

1 The Diaphragm.
2_9 The Ninth Dorsal.
2_{9a} The Ninth Ribs.
2_{10} The Tenth Dorsal.
2_{10a} The Tenth Ribs.
2_{11} The Eleventh Dorsal.
2_{11a} The Eleventh Ribs.
2_{12} The Twelfth Dorsal.
2_{12a} The Twelfth Ribs.
3_1 The First Lumbar.
3_2, 3_3 The Second and the Third Lumbar respectively.
4 Position of the Thoracic Portion of the Œsophagus.
5 Position where the Œsophagus Pierces the Diaphragm.
6 Position of the Abdominal Portion of the Œsophagus.
7 Position of the Cardiac Orifice.
8 Dhauti Swallowed.
9 The Greater Curvature.
10 The Lesser Curvature.
11 The Pyloric Orifice.
12 A Part of the Duodenum.
R The Right Side of the Abdomen.

POINTS OF STUDY:—

1 — (a) The plate covers from the ninth to the twelfth dorsal and the first four lumbar vertebræ.

(b) It also covers the œsophagus and the stomach, and indicates the initial portion of the duodenum.

2 — (a) The upper surface of the diaphragm is to be seen in the picture and is marked 1.

(b) Opposite the vertebral column, it stands a little below the upper border of the eleventh dorsal.*

(c) On the right it rises a little above the eleventh dorsal.

(d) On the left the highest point in its curvature is a trifle lower than the upper border of the eleventh dorsal.

3 — (a) The thick black line first stretching across the vertebral column and then deviating to the left is a shadow of the Dhauti.

(b) The J-shaped thickest shadows are cast by the Dhauti, its numerous folds having accumulated in the stomach.

(c) The continuation of these shadows on the right, may be a part of the Dhauti pushed into the duodenum.

(d) Or, it may be only a portion of barium sulphate squeezed out of the Dhauti by the digestive tube and let off into the duodenum by the stomach.

4 — (a) The Dhauti forms no folds in the œsophagus either in the thoracic or in the abdominal portion of it.

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* The following from Gray's Anatomy will interest our readers. "Skiagraphy shows that the height of the Diaphragm in the thorax varies considerably with the position of the body. It stands highest when the body is horizontal and the patient on his back, and in this position it performs the largest respiratory excursions with normal breathing. When the body is erect the dome of the Diaphragm falls, and its respiratory movements become smaller. The dome falls still lower when the sitting posture is assumed, and in this position its respiratory excursions are smallest."

(b) The Dhauti looks to be inclined to the left as it reaches the diaphragm. This is because the œsophagus itself deviates to the left as it passes to the diaphragm to pierce it.

5 —(a) The cross of the two shadows, that of the Dhauti and of the diaphragm marks the œsophageal hiatus in the diaphragm.

(b) It is situated in front of the eleventh dorsal.

6 —(a) The abdominal portion of the œsophagus is only half an inch in length and ends in the cardiac orifice. So in this picture, the cardiac orifice must be situated at the level of the upper border of the twelfth dorsal.

(b) In the present radiograph it casts no shadow.

7 —(a) The stomach starts with the cardiac orifice. Therefore in the skiagraph under examination the beginning of the stomach must be in level with the upper border of the twelfth dorsal.

(b) Along the line of the Dhauti, however, there are no shadows upto the middle of the first lumbar.

(c) It appears, therefore, that the upper portion of the stomach is empty,† the Dhauti being pressed down in the lower portion of it for being driven to the duodenum.

8 —(a) The deepest shadows having the shape of J are cast by the stomach.

(b) Their uniform depth shows that the Dhauti has been evenly distributed inside the stomach.

9 —(a) The lesser curvature of the loaded stomach is to be completely seen in the picture.

(b) Its highest point is situated a little above the level of the lower border of the first lumbar.

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† It can be seen from the original radiograph that this portion is filled with gases.

(c) The lowest point in this curvature is a little above the level of the lower border of the third lumbar.

10 — (a) The lowest part of the greater curvature has not been covered by the present plate.

(b) The highest point in the greater curvature is located in a line with the upper border of the second lumbar.

(c) The lowest point in this curvature is not to be seen. But the lower end of it is in level with the middle of the third lumbar.

11 — (a) The borders of both the curvatures are not continuous, but are broken at various points.

(b) This is due to the folds of the Dhauti being arranged a bit irregularly in the stomach.

12 — (a) The pyloric orifice is situated at the end of the stomach. Therefore its position is indicated in the present picture by the point where the thick and broad shadows of the stomach end.

(b) Hence in this radiograph it lies a little below the level of the middle of the third lumbar.

13 — (a) Only a part of the duodenum is to be seen in the radiograph, being shown by the shadows either of the Dhauti pasted with barium sulphate or barium sulphate itself.

(b) The commencement of the duodenum in the present case is in a line with the middle of the third lumbar.

(c) It rises upwards from the pylorus.

EXPERIMENT II

OBJECTS OF THE EXPERIMENT :—

In the first experiment the lower part of the stomach has been left out. The special object of this experiment was to include that part for studying its own position and the behaviour of the swallowed Dhauti in it.

PREPARATION OF THE SUBJECT :—

The subject was taken up for this experiment some twenty minutes after the last, while he continued to retain the same Dhauti in his stomach.

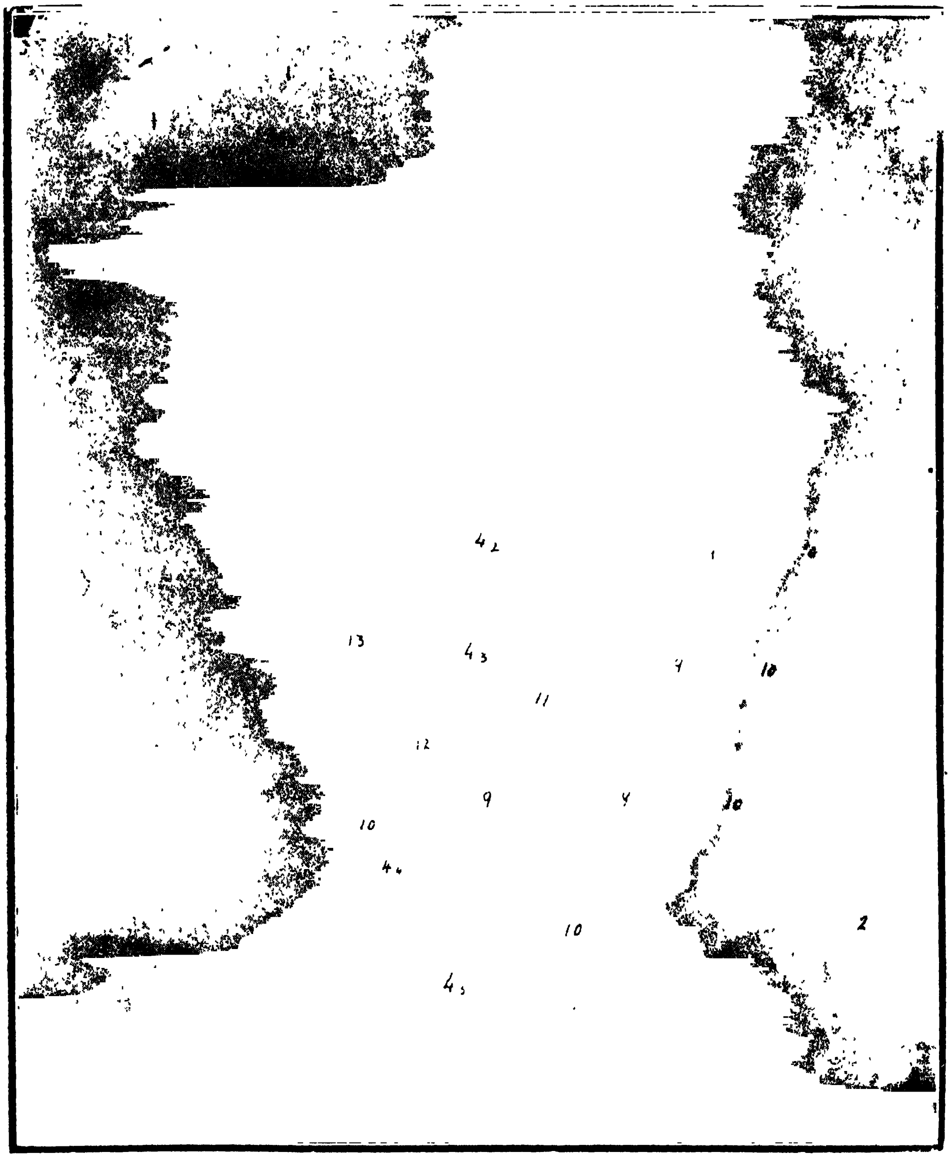
THE EXPERIMENT PROPER :—

The position of the subject and the X-Ray arrangements in this experiment, were the same as in the last. The resulting radiograph is shown in Fig. LXXXIV.

REFERENCES TO RADIOGRAPH II

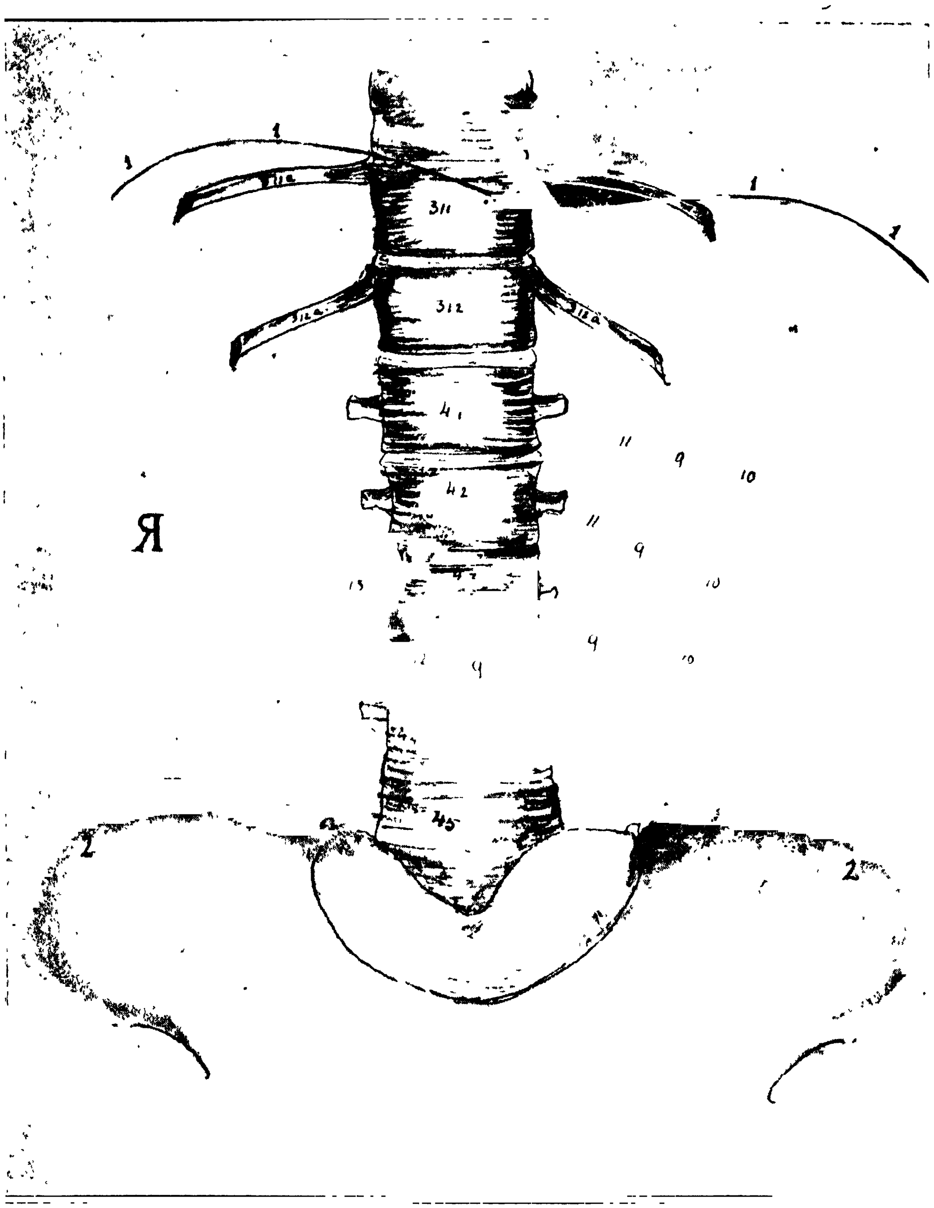
1 The Diaphragm.
2 The Iliac Bones.
3_{11} The Eleventh Dorsal.
3_{12} The Twelfth Dorsal.
3_{12a} The Twelfth Ribs.
4_1 The First Lumbar.
4_2, 4_3, 4_4, 4_5 The Successive Lumbar Vertebræ upto the Fifth.
5 Position of the Thoracic Portion of the Œsophagus.
6 Position where the Œsophagus Pierces the Diaphragm.
7 Position of the Abdominal Portion of the Œsophagus.
8 Position of the Cardiac Orifice.
9 Dhauti Swallowed.
10 The Greater Curvature.
11 The Lesser Curvature.
12 The Pyloric Orifice.
13 A Part of the Duodenum.
R The Right Side of the Abdomen.

Fig. LXXXIV **Radiograph II**



Normal Stomach
With
Dhauti Swallowed.

Fig. LXXXIVa



Line Drawing of Radiograph II

REFERENCES TO RADIOGRAPH II

1 The Diaphragm.
2 The Iliac Bones.
3_{11} The Eleventh Dorsal.
3_{12} The Twelfth Dorsal.
3_{12a} The Twelfth Ribs.
4_1 The First Lumbar.
4_2, $_3$, 4_4, 4_5 The Successive Lumbar Vertebræ upto the Fifth.
5 Position of the Thoracic Portion of the Œsophagus.
6 Position where the Œsophagus Pierces the Diaphragm.
7 Position of the Abdominal Portion of the Œsophagus.
8 Position of the Cardiac Orifice.
9 Dhauti Swallowed.
10 The Greater Curvature.
11 The Lesser Curvature.
12 The Pyloric Orifice.
13 A Part of the Duodenum.
R The Right Side of the Abdomen.

POINTS OF STUDY:—

N. B. As this radiograph represents the same position as Radiograph I, except for the inclusion of the lower portion of the stomach and the exclusion of the upper portion of œsophagus, we shall study only those points that have not been noticed in the case of the first radiograph.

1 — (a) The plate starts only with the lower portion of the tenth dorsal.
    (b) The upper part of the œsophagus has, therefore, been excluded.
    (c) The lowest portion of the thoracic œsophagus is, however, included; and the Dhauti in it is to be seen clearly marked against the tenth dorsal as far as it is skiagraphed here.

2 — (a) The fourth and the fifth lumbar are included in this picture.
    (b) The crests of the two hip-bones are to be seen in the two lower corners.
    (c) The lowest portion of the stomach is clearly visible in this radiograph.
    (d) The duodenum is indicated here to a larger extent than in the previous skiagraph.

3 — (a) The portion of the greater curvature that is included in the picture under examination, but was excluded in Radiograph I, has the same characteristics as the remaining portion of it. Its border line is broken at different places.
    (b) Its lowest point is lower than the upper border of the fifth lumbar vertebra.

4 — (a) The pyloric part of the stomach is very clearly seen in the figure.
    (b) It has assumed the shape characteristic of it when the stomach is full.

5 — (a) The whole loaded stomach presents a more compact appearance in this radiograph than in the last.

(b) Owing to the pressure of contents being driven to the pylorus, the stomach has assumed more exactly the welknown J-shape.

(c) Owing to this very pressure which is, perhaps, greater in this experiment than in the last, the lower part of the stomach has deviated a little to the left, as can be seen from the comparative positions of the lowest points of the lesser curvature.

(d) In the first radiograph this point is to the right of the left border of the third lumbar; whereas in this radiograph it is exactly on the left border of it.

6 — (a) The duodenum has cast a longer, broader and deeper shadow in this than in the last skiagraph.

(b) A larger portion of the pasted Dhauti or a bigger quantity of barium sulphate has found its way to the duodenum.

(c) Its starting point is located here in a line with the lower border of the third lumbar; whereas in the previous radiograph it lies in level with the middle of that vertebra.

(d) The shadow of the upper half of duodenum, as far as it is visible in this figure, is broader than that of the lower half.

(e) This is, perhaps, due to the presence of a fold in this part of the small intestine.

(f) The starting point of the duodenum, which also marks the position of the pyloric orifice, is located, in this radiograph, to the left of the right border of the third lumbar. But in the first radiograph the same was seen to lie on the right side of the right border of the same vertebra.

(g) The point noted in (f) also shows that the lower part of the stomach has a little deviated to the left, as compared with its position in the last experiment.

EXPERIMENT III

OBJECTS OF THE EXPERIMENT :—

One of the objects of this experiment was to note the position and shape of the stomach under Uḍḍiyāna while it continued to hold the swallowed Dhauti. Another object was to examine how the Dhauti was treated by the stomach when it was allowed to lie there for nearly an hour and the Uḍḍiyāna was practised ultimately. The third object was to understand the behaviour of the Dhauti under Uḍḍiyāna, if it had passed the duodenum.

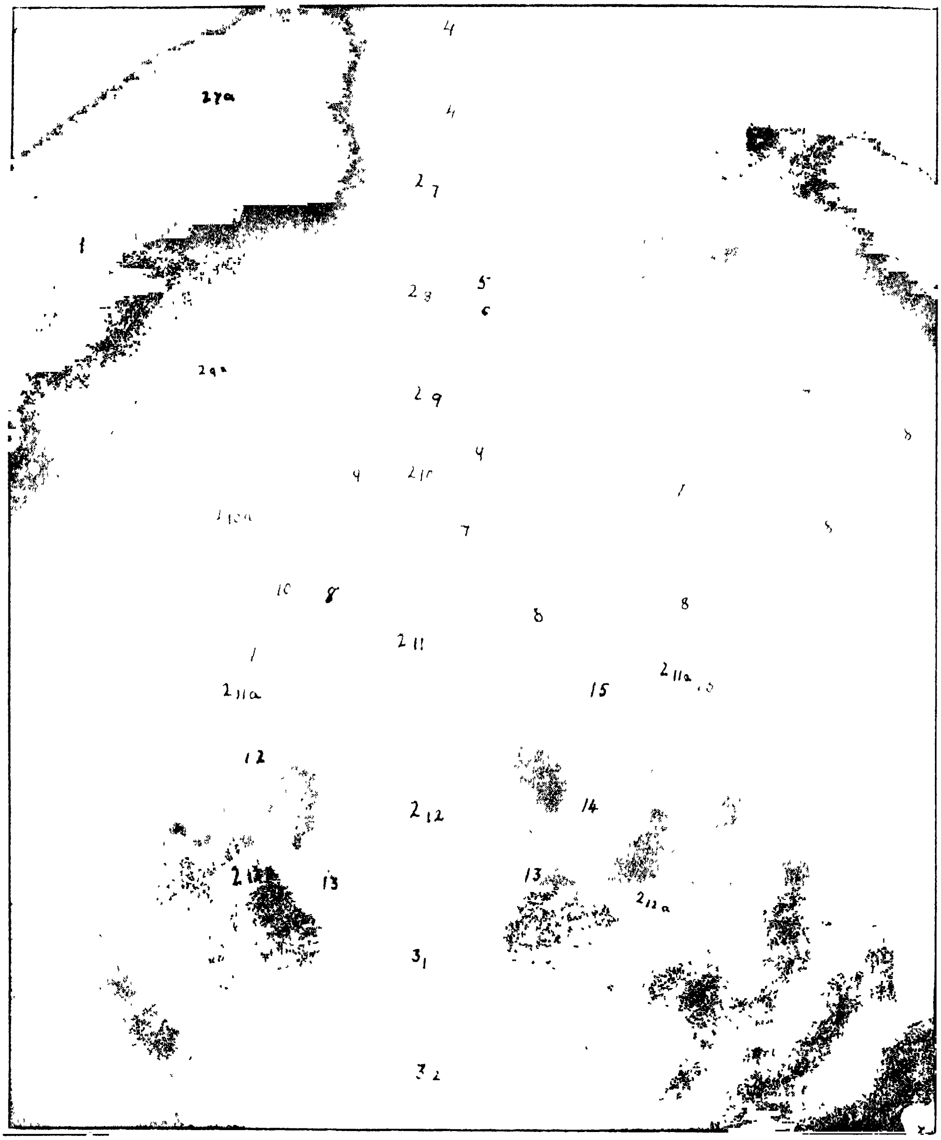
PREPARATION OF THE SUBJECT :—

The subject was taken up for this experiment some twenty minutes after the last, while he continued to retain the same Dhauti in his stomach.

THE EXPERIMENT PROPER :—

The subject was seated, as in the last two experiments, on a stool, his legs resting on the ground below. The X-Ray plate was held against his abdomen, quite close to it, while he practised Uḍḍiyāna. The performance of this required only as much bending as was done in the last two experiments. The X-Ray tube was arranged behind the subject's back. The radiograph taken in this position has been produced in Fig. LXXXV.

Fig. LXXXV **Radiograph III**



Stomach in Uḍḍiyāna
With
Dhauti Swallowed.

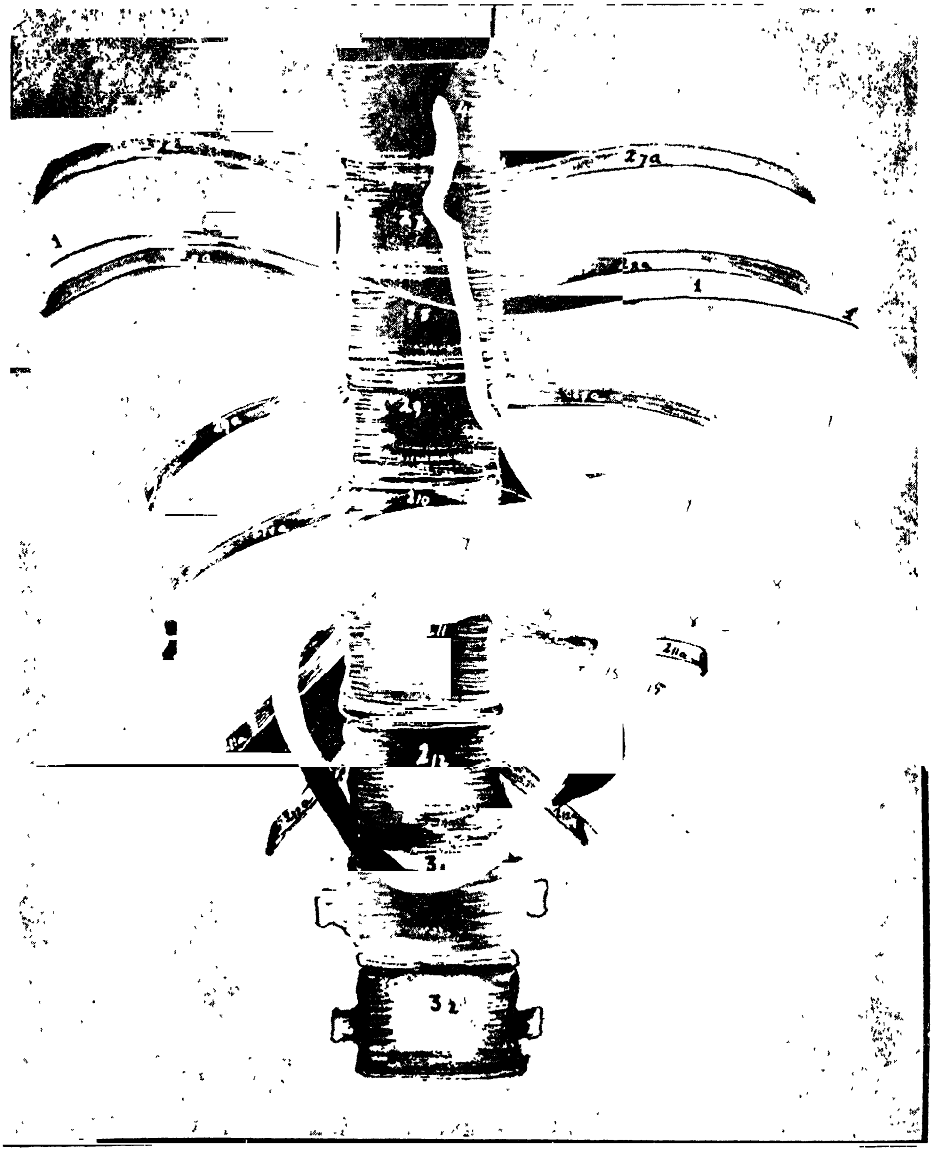
REFERENCES TO RADIOGRAPH III

1 The Diaphragm.
2_7 The Seventh Dorsal.
2_{7a} The Seventh Ribs.
2_8 The Eighth Dorsal.
2_{8a} The Eighth Ribs.
2_9 The Ninth Dorsal.
2_{9a} The Ninth Ribs.
2_{10} The Tenth Dorsal.
2_{10a} The Tenth Ribs.
2_{11} The Eleventh Dorsal.
2_{11a} The Eleventh Ribs.
2_{12} The Twelfth Dorsal.
2_{12a} The Twelfth Ribs.
3_1 The First Lumbar.
3_2 The Second Lumbar.
4 Position of the Thoracic Portion of the Œsophagus.
5 Position where the Œsophagus Pierces the Diaphragm.
6 Position of the Abdominal Portion of the Œsophagus.
7 Dhauti Swallowed.
8 The Greater Curvature.
9 The Lesser Curvature.
10 The Pyloric Orifice.
11 Position of the Superior Portion of the Duodenum.
12 Position of the Descending Portion of the Duodenum.
13 Position of the Horizontal Portion of the Duodenum.
14 Position of the Ascending Portion of the Duodenum.
15 A Part of the Jejunum.
R The Right Side of the Abdomen.

REFERENCES TO RADIOGRAPH III

1 The Diaphragm.
2_7 The Seventh Dorsal.
2_{7a} The Seventh Ribs.
2_8 The Eighth Dorsal.
2_{8a} The Eighth Ribs.
2_9 The Ninth Dorsal.
2_{9a} The Ninth Ribs.
2_{10} The Tenth Dorsal.
2_{10a} The Tenth Ribs.
2_{11} The Eleventh Dorsal.
2_{11a} The Eleventh Ribs.
2_{12} The Twelfth Dorsal.
2_{12a} The Twelfth Ribs.
3_1 The First Lumbar.
3_2 The Second Lumbar.
4 Position of the Thoracic Portion of the Œsophagus.
5 Position where the Œsophagus Pierces the Diaphragm.
6 Position of the Abdominal Portion of the Œsophagus.
7 Dhauti Swallowed.
8 The Greater Curvature.
9 The Lesser Curvature.
10 The Pyloric Orifice.
11 Position of the Superior Portion of the Duodenum.
12 Position of the Descending Portion of the Duodenum.
13 Position of the Horizontal Portion of the Duodenum.
14 Position of the Ascending Portion of the Duodenum.
15 A Part of the Jejunum.
R The Right Side of the Abdomen.

Fig. LXXXVa



Line Drawing of Radiograph III

POINTS OF STUDY :—

1 — (a) The radiograph shows the dorsal vertebræ from the seventh to the twelfth together with the first lumbar and a part of the second.

(b) It covers the œsophagus, the stomach, and indicates the duodenum and most probably a part of the jejunum.

2 — (a) The upper surface of the diaphragm is to be seen in the picture and is marked 1.

(b) In front of the vertebral column it lies in level with the top of the ninth dorsal.

(c) On the left of the vertebral column it rises as high as the middle of the eighth dorsal.

(d) On the right of the vertebral column its highest point is situated in a line with the base of the seventh dorsal.

(e) Comparing these positions with those noted in the first experiment [see 2—(a), P. 182], we find that the diaphragm has risen in Uḍḍiyāna, from the top of the eleventh dorsal to the top of the ninth in front of the spine, from below the upper border of the eleventh dorsal to the middle of the eighth on the left of the spine, and from a little above the eleventh dorsal to the base of the seventh on the right of the spine.

3 — (a) The thick black line first stretching across the vertebral column and then deviating to the left is a shadow of the Dhauti.

(b) The broad and thick shadows horizontally crossing the plate in the middle, are cast by the stomach, the folds of the Dhauti pasted with barium sulphate having accumulated there.

(c) The continuation of these shadows is a semi-circular arc which indicates the Dhauti in the duodenum and hence marks the position of the latter under Uḍḍiyāna.

(d) Broader shadows are seen issuing from the end of the arc. They ascend to disappear behind the stomach and descend to appear again a little to the left of their ascending belt.

(e) They indicate the position of the jejunum, the uppermost fold of it.

(f) This part is probably filled with the pasted Dhauti and squeezed out barium sulphate, or more probably with barium sulphate alone.

4 — (a) The Dhauti forms no fold in the œsophagus in its abdominal portion.

(b) But in the thoracic portion the Dhauti forms two folds at the root of the left seventh rib.

(c) This is most probably due to the shortened length of the thoracic œsophagus In Uḍḍiyāna the height of the thoracic cavity is considerably reduced, mainly owing to the great rise in the level of the diaphragm. So the original length of the thoracic œsophagus has to be accommodated within this shorter space This naturally reduces the length of the œsophagus and allows the Dhauti to lie in curves.

5 — (a) The cross of the two shadows, that of the Dhauti and of the diaphragm, marks the position of the œsophageal hiatus in the diaphragm.

(b) It is situated in front of the eighth dorsal.

(c) In the last two radiographs the hiatus lay in front of the eleventh dorsal. That means Uḍḍiyāna has raised it from the eleventh to the eighth.

6 — (a) The abdominal portion of the œsophagus is only half an inch in length, and ends in cardiac orifice. So in the present picture that orifice must be

situated at the level of the lower border of the ninth dorsal.

(b) In the figure under examination the cardiac orifice is not to be seen because it casts no shadow. Perhaps it is also hidden behind the stomach in this experiment.

7 — (a) Owing to Uḍḍiyāna the position of the stomach as studied in the last two experiments has been completely changed.

(b) Hence the empty upper portion of that organ which was noticed in those experiments is not seen here being hidden behind the loaded lower portion of it.

8 — (a) The upper surface of the loaded stomach almost touches the diaphragm.

(b) The highest point in that surface is now in level with the middle of the eighth dorsal.

(c) In the last two experiments this point was a little above the level of the lower border of the first lumbar.

(d) That means the highest point in the loaded stomach has risen from the lower border of the first lumbar to the middle of the eighth dorsal.

9 — (a) Owing to the compressed and flattened condition of the stomach, the two curvatures, the lesser and the greater, which in the last two experiments were so vastly disproportionate in length, have equalised themselves here in this regard.

(b) Owing to the same reason, the borders of the two curvatures are more continuous in this than in the two previous radiographs.

10 — (a) The J-shape of the stomach has completely disappeared.

(b) The shadows broadening in the lower part of the stomach as marked in the second radiograph are seen here narrowing almost to a point.

(c) The lowest point in the position of the stomach in the present picture is a little below the top of the eleventh dorsal.

(d) In the previous experiment this point was noted to be a little below the top of the fifth lumbar.

(e) That means the whole stomach has been raised from the fifth lumbar to the eleventh dorsal.

11 — (a) The end of the broad shadows of the stomach indicates the position of the pyloric orifice.

(b) It is situated in the present experiment almost in a line with the top of the eleventh dorsal.

(c) In the second experiment it lay at the base of the third lumbar.

(d) That is, from the base of the third lumbar it is raised to the top of the eleventh dorsal owing to Uḍḍiyāna.

12 — (a) The duodenum is clear of barium sulphate.

(b) The only shadow it throws is that of the pasted Dhauti.

(c) It seems that the quantity of barium sulphate in the duodenum has been pushed into the jejunum.

(d) It is also *probable* that during Uḍḍiyāna the pyloric orifice has opened and the semi-solid solution of barium sulphate has been pushed back into the stomach. Which of the two actions has happened or whether both have happened in parts, we have no clue, in this radiograph, to understand.*

*** We have observed on the fluorescent screen that pylorus opens during Uḍḍiyāna and the contents of the duodenum are pushed back into the stomach. We are collecting more experimental evidence on the point and shall be glad to publish it when properly formulated.**

(e) The circular curve of the duodenum can be clearly seen in the radiograph, being indicated by the arc of the shadow cast by the Dhauti.

(f) The lowest point of the duodenum lies in front of the top of the first lumbar.

(g) In the second radiograph the highest point of the duodenum lay in a line with the base of the second lumbar.

(h) Statements made in (f) and (g) show how far the duodenum has been raised owing to Uḍḍiyāna.

(i) The starting point of the duodenum is raised from the top of the fourth lumbar to the top of the eleventh dorsal. Now as the duodenum is, for the most part, fixed to the abdominal wall, it seems that the wall itself is considerably raised during Uḍḍiyāna.

13 —(a) As the duodenum measures something like six inches only, the small intestine shown in this figure must be covering a part of the jejunum.

(b) Most probably the fold that lies to the left of the spine pertains to the jejunum.

N.B Instruction in Yogic culture higher as well as lower will be given gratis at the Ās'rama to everyone that earnestly seeks it.

Following diseases, especially in their chronic condition, can be effectively treated by the Yogic methods:

1. *Constipation.*
2. *Dyspepsia.*
3. *Head-ache.*
4. *Piles.*
5. *Heart-disease*
6. *Neuralgia.*
7. *Diabetes.*
8. *Hysteria*
9. *Consumption.*
10. *Obesity.*
11. *Sterility (certain types).*
12. *Impotence.*
13. *Appendicitis &c.*

Therapeutical advice is given gratis at the Ās'rama to patients coming for consultation.

Arrangements have been made under the supervision of the Ās'rama for students and patients to stay on payment of actual expenses, Rs. 45 P. M. For details see pages 234-240 of this issue.

The Semi-Scientific Section

THE DIGESTIVE APPARATUS

"THE apparatus for the digestion of the food consists of the digestive tube and of certain accessory organs.

The **digestive tube** (alimentary canal), about 30 feet long, extends from the mouth to the anus, and is lined throughout by mucous membrane. It consists of the following parts: at its commencement is the *mouth*, where provision is made for the mechanical division of the food (*mastication*), and for its admixture with a fluid secreted by the salivary glands (*insalivation*); beyond this are the organs of deglutition, the *pharynx* and the *œsophagus*, which convey the food into the *stomach*, where the first stages of the digestive process take place; the stomach is followed by the *small intestine*, which consists of three parts, the *duodenum* the *jejunum*, and the *ileum*. In the small intestine the process of digestion is completed and the resulting products are absorbed into the blood and lymph-vessels. Finally the small intestine ends in the *large intestine*, which is made up of the *cæcum*, the *colon*, the *rectum*, and the *anal canal*, the last ending on the surface of the body at the *anus*.

The **accessory organs** are the *teeth*, for purposes of mastication; the three pairs of *salivary glands....* the *parotid*, *submaxillary* and *sublingual....* the secretion from which mixes with the food in the mouth and acts chemically on one of its constituents; the *liver* and the *pancreas*, two large glands in the abdomen, the secretions of which, in addition to that of numerous minute glands in the walls of the alimentary canal, take part in the process of digestion."

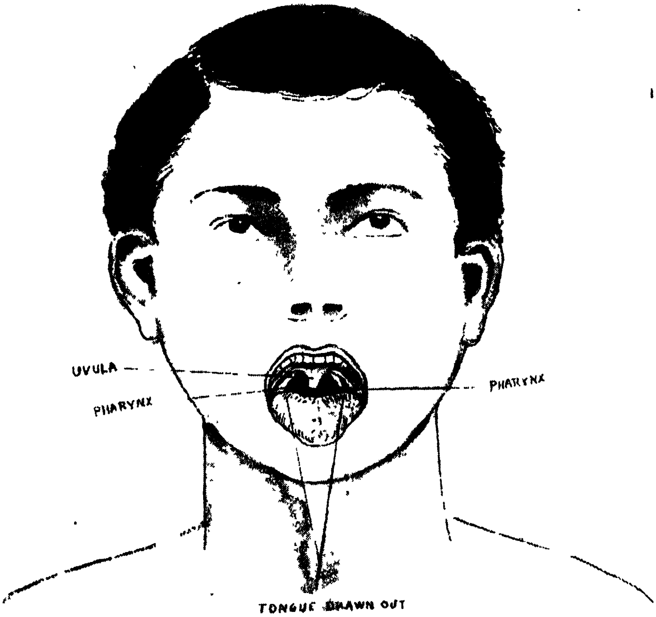
In this note we shall notice the different parts of the digestive tube and the accessory organs promiscuously, taking them up one by one as we move from the lips to the anus. Those parts that are quite familiar to everyone of us and that play little part in Yogic processes, will not be treated at any length.

THE MOUTH—The digestive tube starts with the mouth. We can best study this part with the help of a mirror. Fig. LXXXVII will also be of some use in understanding matters. When we widely open our mouth, fully drawing out our tongue before a mirror, we notice a reddish delicate covering that lines its whole cavity. This is called *mucous membrane.* It is of the same nature as the skin which covers the external surface of our body. The only difference between the two is that mucous membrane is more delicate and soft than the skin. At the entrance of every orifice in the body, the skin is changed into mucous membrane. The mucous membrane which lines the cavity of the mouth, continues without any break upto the anus and thus covers every part of the digestive tube.

If we breathe out violently before a mirror with our mouth widely opened, we find that a portion of flesh in the roof of the mouth, moves up and down with the movement of our breath. This is called the *soft palate* in contrast with the *hard palate* which is formed of bones and which lies between the soft palate and the upper row of front teeth. If we run our finger across the whole palate, we immediately distinguish between the hard and soft parts of the roof of our mouth. Another thing which the image in the mirror presents to our sight is the pendent conical lump of flesh hanging from the middle of the posterior arch of the soft palate. It is the *uvula.*

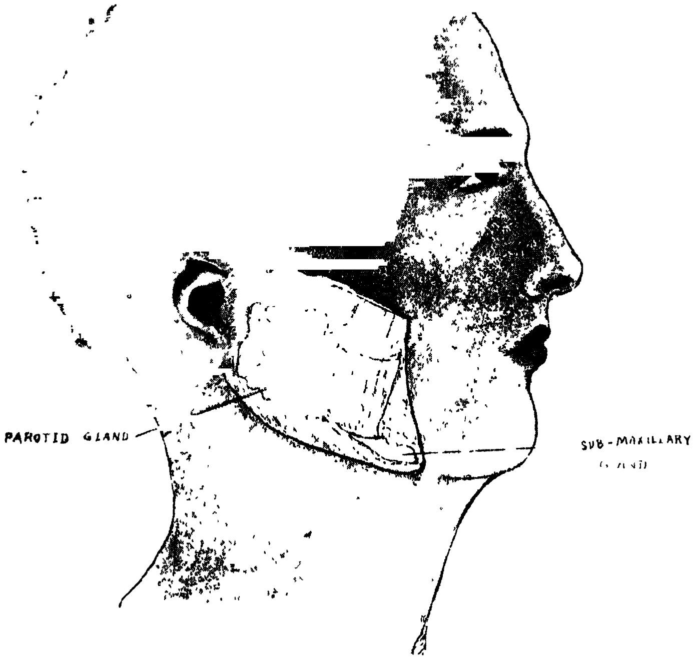
THE SALIVARY GLANDS—Before we pass on to those parts of the digestive tube that lie above and behind the soft palate and also below and behind the tongue, we have to notice three important structures, on each side of the mouth, called the *salivary glands.* As they are imbeded in the flesh of the mouth, they are not available for superficial observation. We may, however, know their position accurately with reference to other parts of the mouth. The *parotid* gland is the largest of the three and is situated on the side of the face in front of the external ear and immediately below it. (Vide Fig. LXXXVIII). As shown in the

Fig. LXXXVII



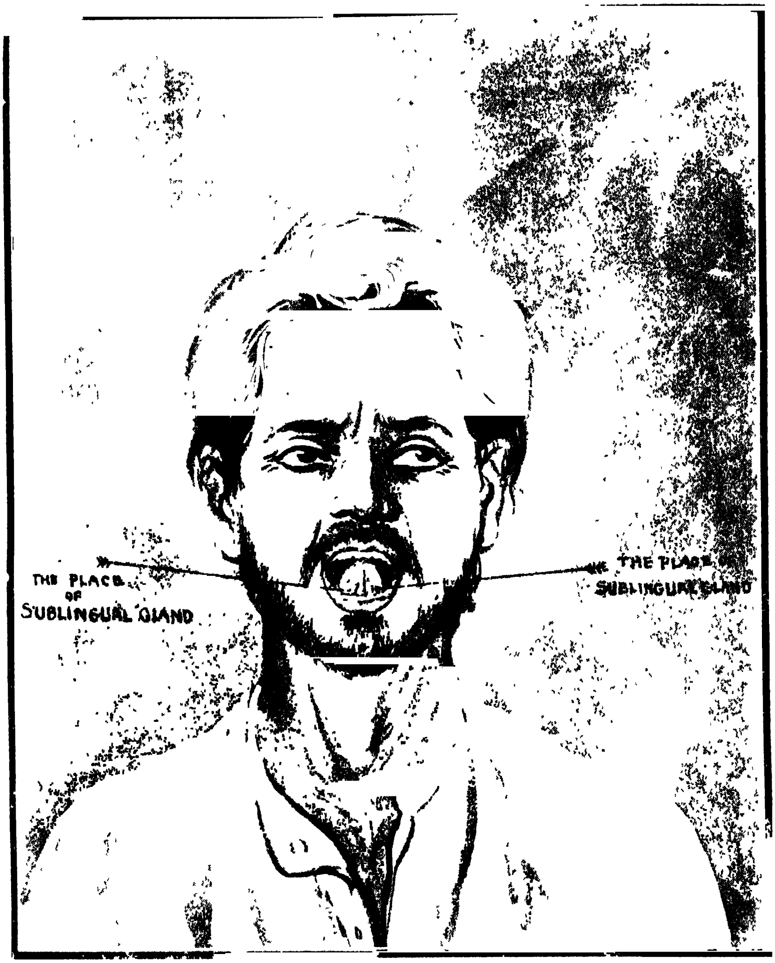
A View of The Pharynx
With
The Tongue Drawn out.

Fig. LXXXVIII



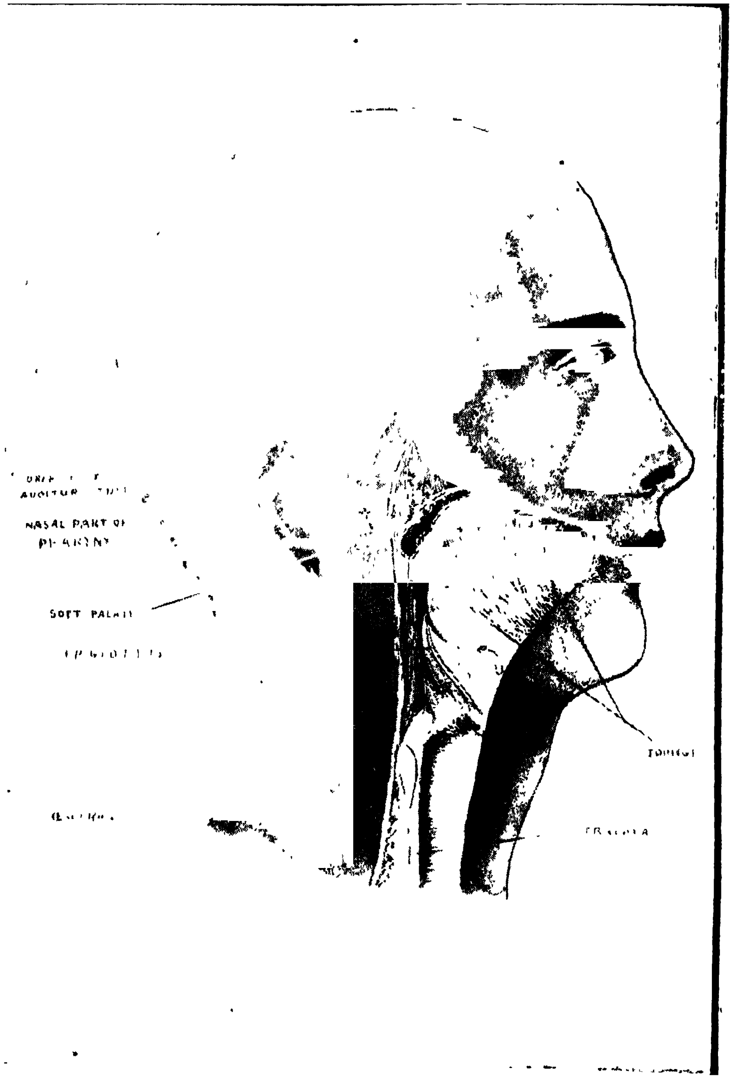
Parotid & Submaxillary Glands Exposed.

Fig. LXXXIX



The Place of Sublingual Gland.

Fig. XC



The Pharynx & The Œsophagus Exposed.

same illustration, the *submaxillary* is located below and to the inner side of the lower jaw, in front of the angle of the jaw. The *sublingual* glands lie on the floor of the mouth, between the tongue and the gums. (See Fig. LXXXIX).

These glands manufacture a colourless liquid that has neither smell nor taste, called *saliva.* When food is being masticated quantities of saliva stream out from these glands and become mixed up with it. The same happens, though on a smaller scale, when a man is speaking. If the speaker becomes nervous these glands strike work and dry mouth is the result! Saliva is useful in deglutition as it moistens the morsels while they are prepared for being swallowed. We shall study the use of saliva in digestion when we notice the physiology of the digestive tube.

THE PHARYNX—Looking again into the mirror with the mouth widely opened, we observe that there is something like a wall of flesh covered over with the mucous membrane stretching behind the tongue and the soft palate. This is the posterior wall of what is called the *pharynx.* (Vide Fig. XC). This wall arches above the soft palate in something like a dome. Below the tongue it descends in the form of a sack that ends in the œsophagus and the *larynx.* The pharynx lying above the soft palate is pierced by four openings. Two of these lead to the nasal passages which after a curved course end in the two nostrils. The other two form the mouths of the auditory tubes which run to the cavities of the ears. (See P. 134, Vol. I, Y. M.). At the time of breathing an opening is left between the back wall of the pharynx and the soft palate which allows free passage to the air as it passes to and from the lungs. But at the time of swallowing or speaking the soft palate completely covers the upper part of the pharynx, so that neither food nor air can find its way upwards. In some persons, the soft palate is defective, there being a small cleft in it. When these people attempt speaking, some of the air from the lungs escapes through this cleft above the palate; and finding its way through the nasal passages that are ever open, adds nasalised element to the voice.

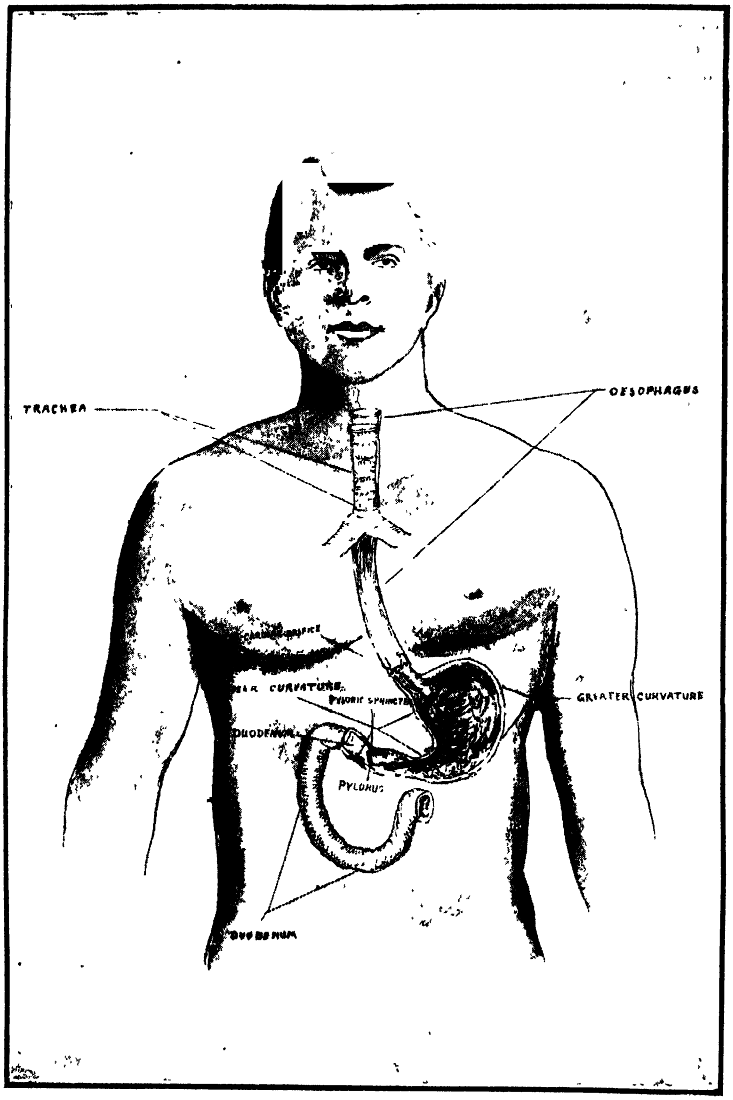
The lower part of the pharynx ends in two tubes as has been stated above–the œsophagus and the larynx. Of these the œsophagus leads to the stomach and is a part of the digestive tube, whereas the larynx leads to the lungs through the trachea and has nothing to do with the alimentary canal. We shall notice the œsophagus presently; but before we do so, we want to see why food going down the pharynx does not run into the trachea or the windpipe and is always pushed down the œsophagus. For this purpose we have to refer to a small organ named *epiglottis*.

The epiglottis is situated at the root of the tongue and serves as a cover for the windpipe in times of need. In the act of swallowing, the windpipe is raised, and the descending morsel lowers the epiglottis which meeting the raised windpipe completely covers its mouth. Thus the trachea being closed, food finds its way to the œsophagus or gullet. The rising of the windpipe can be felt by anybody by placing his fingers on the middle of his throat and imitating the act of swallowing. If, however, through mistake, even a small particle of food gets the wrong way, we mean gets into the larynx, violent coughing ensues, the system forcibly trying to expel the intruder.

It has already been mentioned that the mucous membrane covering the mouth is continuous with the pharynx. Now it is to be noted that it continues to cover all the passages leading from the pharynx. It is this circumstance which makes a trouble starting with the throat very often spread to the nose, ear and trachea. That is why running of the nose, deafness of the ear and coughing are on many occasions seen going together.

THE ŒSOPHAGUS—The œsophagus is a downward continuation of the pharynx connecting it with the stomach. It is some 9 or 10 inches in length. The œsophagus is situated between the trachea in front and the vertebral column behind it. The upper extremity of the gullet is situated opposite the sixth cervical vertebra. After traversing the thorax, it pierces the diaphragm opposite the

Fig. XCI



The Trachea & The Digestive Tube
up to
The End of The Duodenum Exposed.

tenth thoracic vertebra. The abdominal portion of the œsophagus which lies below the diaphragm measures only less than an inch, and joins the stomach at the level of eleventh thoracic vertebra. The opening by which the gullet communicates with the stomach is known as the *cardiac orifice*, because it lies on the side of the heart. (Vide Fig. XCI).

"The general direction of the œsophagus is vertical; but it presents two slight curves in its course. At its commencement it is placed in the middle line; but it inclines to the left side as far as the root of the neck, gradually passes again to the middle line, which it reaches at the level of the fifth thoracic vertebra, and again deviates to the left as it passes forwards to the œsophageal hiatus in the diaphragm." The abdominal portion of the gullet which lies below the diaphragm is also sharply curved to the left. (See Fig. XCI).

The œsophagus contains a thick layer of muscular fibres. A wave of contraction passing down the gullet pushes the food before it and leads it to the stomach.

THE STOMACH—The stomach is the most dilated part of the digestive tube, and is situated between the end of the œsophagus and the beginning of the small intestine. The main bulk of the stomach lies under the left ribs. It is held between the diaphragm above, the intestine below and the liver on the right. The position of this organ, however, is constantly changing. It not only changes according to the quantity of food that it contains at a particular time, but it also differs according to the stage of digestion its contents reach and the condition of the adjacent intestines. These three factors not only determine its position in the abdomen, but are responsible for changing its size also. A comparison between Radiographs II and III will show what widely different positions can be given to the stomach. Although in the ordinary course of things the stomach does not change its position so greatly, yet the three factors stated above do shift it from place to place within narrow limits.

As can be clearly seen in Radiograph II a fully distended stomach assumes a J-shape.

The stomach has two openings. We have already made reference to the cardiac orifice which joins the œsophagus with the stomach. The other opening is called the *pyloric orifice.* By means of this the stomach communicates with the small intestine. It marks the lower end of the stomach and is indicated by a narrow circular groove of musculature known as the pyloric sphincter. The pyloric orifice lies to the right of the middle line at the level of the upper border of the first lumbar vertebra.

We have stated above that the stomach is only a dilated part of the alimentary canal. This dilatation starts with the end of the œsophagus and stops short with the beginning of the small intestine. Between these two points this dilated portion of the digestive tube lies in two curvatures. (See Fig. XCI). One on the right side of the stomach and the other on its left side. The peculiar shape of the stomach leads to a great divergence of lengths between these two curvatures, the left curvature being four or five times as long as the right one. Hence the curvature on the left is called the *greater curvature* and the curvature on the right is called the *lesser curvature.*

The wall of the stomach consists of different coats. They are four in number. We can take notice of the most important of these, namely the muscular coat and the mucous coat. The muscular coat which stands in the middle is made of muscular fibres which we cannot move by our will. It means they are of involuntary character, their movements being determined by the chemical nature of food and its quantity. From the beginning of the œsophagus down to the end of the rectum, the musculature of the alimentary canal is involuntary. After the food is swallowed by a voluntary effort of the pharynx, we have to leave it to the mercy of Nature. We cannot control it by the effort of our will. Under normal circumstances, however, Nature's work is prompt and unfailing. As soon as food enters the stomach its muscular fibres begin to contract and relax alternately, thus enabling the stomach to do its work.

The innermost coat consists of the mucous membrane. This layer is thrown into folds and thus a wrinkled appearance is presented by the inner surface of the stomach, as shown in Fig. XCI. The most important feature of the mucous coat is the presence of the *peptic* or *gastric glands* which lie buried in the substance of the membrane. When food gets into the stomach, these glands become active and a sort of liquid streams out from them and is mixed with the food. This fluid is named the *gastric juice* as it is manufactured in the stomach. And as it helps digestion the glands which produce it are called *peptic glands.* A provision of rich blood supply has been made for these glands. When the stomach is empty, the glands are inactive and the blood flow is deficient; but as soon as food makes its appearance in the stomach, richer quantities of the blood automatically flow to the glands leading to their increased activity.

THE DUODENUM—We have seen above that the stomach opens into the small intestine by means of the pyloric orifice. This small intestine is a convoluted tube, extending from the pylorus to the ileo-cecal valve, where it joins the large intestine. It is about 22 feet long, and gradually diminishes in diameter from its commencement to its termination. It is contained in the central and lower parts of the abdominal cavity and is surrounded above and at the sides by the large intestine.

The small intestine is divided into three successive parts the *duodenum*, the *jejunum* and the *ileum.* The duodenum is so named because its length is about equal to the breadth of twelve fingers, (Latin: *duodecim*=twelve), that is equal to some ten inches. It is the shortest, widest and the most fixed part of the small intestine.

The duodenum presents in its course a remarkable curve somewhat of the shape of an imperfect circle. According to the different positions of this curve, the duodenum is divided into separate parts only for descriptive purposes. The *superior portion* is about 5 cm. long. It begins at the pylorus and ends at the neck of the gall-bladder. (See P. 137, Vol. I, Y. M.). The *descending portion* is 8 to 10 cm. long, and descends from the neck of the gall-bladder, along the right side of the spine as low as the upper border of the fourth lumbar. The *horizontal portion* is about 10 cm. long. It passes from right to left, with a slight inclination upwards. The *ascending portion* is about 2·5 cm. long. It rises to the level of the upper border of the second lumbar, where it takes a sharp turn to end in the jejunum.

The superior part of the duodenum, is somewhat movable, but the rest is practically fixed and is bound down to neighbouring viscera and the posterior abdominal wall.

(*To be continued*)

THE RATIONALE OF YOGIC POSES

UPTO now we have noticed, in the pages of the Yoga-Mīmānsā, the most important of the Yogic poses. Though only two of them have been studied at some length, the technique of nearly every pose mentioned in this journal has been detailed. We now propose, in this article, to examine the general principles underlying this part of Yogic physical culture.

As our research work is yet restricted to physiology and as we have not yet started collecting any experimental evidence on the objective side to substantiate Yogic claims in the field of psycho-physiology, our studies in this article will necessarily be limited to the physical culture and therapeutical sides of Yoga. We can only assure our readers that some of the Āsanas at least are capable of directly helping to rouse the spiritual forces, whereas there is not a single pose noticed in this journal that is not capable of indirectly leading to spiritual progress.

At the very outset it is to be made clear that the poses by themselves do not constitute the entire system of Yogic physical culture. They form only a fraction of it, though the fraction is greatly important. In order, therefore, to understand the rationale of the Yogic poses, it is necessary not only to study the general principles underlying the Yogic system of physical culture as a whole, but also to have a hurried survey of the entire field of physical culture, noting the most salient points of comparison and contrast between the Yogic and non-Yogic systems.

A system of physical culture means a system of bodily exercises such as are denuded of all utilities or ulterior ends except those of physical development. The word gymnastics is very often used as an equivalent of the science of physical culture. To our mind gymnastics is a wider term and includes exercises which may not belong to a *system* of physical culture. An example will make matters clear. If we take into consideration the exercises on the parallel bars, we find that they do belong to gymnastics, but they do not belong to a system of physical culture. For, a system of physical culture requires the exercises to be so planned and organized as would develop the different parts of the body in their due proportion and as would also build every part of the human body. It is not sufficient for exercises to belong to a system of physical culture that thay are capable of helping the growth of some parts of the bodily frame. Now if we take the parallel bars exercises, we find that they do help body-building; but it is only the upper part of the somatic frame that is developed and not the body as a whole. Hence the parallel bars cannot form a system of physical culture, although they do fall under gymnastics.*

The idea of the science of physical culture as it is described in the preceding paragraph, is essentially a modern idea in the west. In ancient Greece and Rome body-building was, indeed, given the highest attention. The Greeks are more known for their philosophy than for their gymnastics. And yet physical culture was a veritable passion with them. Plato, one of the greatest Greek philosophers, considered weakness to be perilously near to wickedness and ugliness to sin! But even by the ancient Greeks, physical culture was never studied by itself. It was always developed as a preparation for either games and sports or for military training. The athlete had always his eyes directed to the Panhellenic and especially to the Olympic games or to the fields of battle where he would fight in honour of his motherland. The ancient Romans were emphatically a military race. Hence gymnastics formed only a humble part of the science of war. From this it will be clear that in ancient Europe physical culture was never studied as a science in itself. It was only in the beginning of the last century that physical culture began to be cultivated as an independent science, advocating systems of exercises that would constitute entire schemes for body-building complete in themselves.

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* It may be interesting here to note the controversy which raged in Germany over the parallel bars in the middle of the nineteenth century. From the Royal Central Gymnastic Institute established in Berlin under the joint control of the ministers of war and education, the bars, horizontal as well as parallel, were banished. This was due to the strictly scientific attitude towards physical culture on the part of the head of the Institute. As, however, the bars belonged to gymnastics as it was being developed in Germany, the patriotic feelings rose so high that a very long and bitter controversy ensued in which gymnasts, medical men and university professors took an active part. At last a commission of the most eminent medical men was appointed, and they declared that the bar exercises *from the medical point of view* should not be excluded. It is to be borne in mind, however, that the commissioners did not declare the bar exercises to form a system of physical culture.

Things obtaining in ancient India were not much different from those prevailing in ancient Europe. Here too body-building does not look to be practised for itself; but it generally prepared the gymnast either for games or for war. The very word Malla-Vidyā which is commonly used to denote gymnastic exercises, means the science of wrestling. To the best of our knowledge, in ancient Sanskṛita literature, there is no mention of an independent science taking care of body-building as such.

We cannot, however, afford to pass over one circumstance which may go against what we have said in the last paragraph. In non-medical Sanskṛita literature there are references to *physical exercise* undergone as a daily routine independent of wrestling or any other game. It is called Vyāyāma which literally means *stretching*. This fact creates a strong suspicion in favour of the ancient Indians, crediting them with having a system of physical culture in the modern sense of the word. The suspicion grows almost into conviction when we look to the medical texts referring to bodies built through Vyāyāma as being immune from diseases. These texts also speak of Vyāyāma independent of Malla-Vidyā. The traditions of all the gymnasiums in India also strengthen this conviction. A fairly large number of students in Indian gymnastic institutes goes there simply for body-building, and never undergoes any training in games or sports.

What we have said in the last two paragraphs pertains to non-Yogic physical culture. Although we could not say anything very definitely in this connection, we have precise information bearing on Yogic physical culture. But before we pass on to it, we have to make a brief reference to a type of exercise which is now a days paid much attention to in Mahārāṣhtra and which is claimed, by its advocates, to be an entire system of physical culture. We mean the Namaskāras or prostrations before the Sun God. This system of exercise has been in vogue in Mahārāshṭra at least for a few centuries and is very much favoured by the upper classes of the society. In the eighteenth century it was not unusual to find youths making as many as twelve hundred prostrations every morning. Among such youths were to be seen some of the Brāhmaṇa rulers of the land. In athletic tournaments recently held in Nāsika, there were competitors for as many as two thousand prostrations. Now as these prostrations form a part of Sun worship, they can never be looked upon as a system of physical culture in the modern sense of the word, for the moderners require such a system to have no other end except that of body-building.

Coming to Yogic exercises for physical development, we have at once to admit that they were never meant for body-building exclusively. They were always prescribed for so training the body as would easily lead to spiritual development and would sustain the working of the spiritual forces when roused. Physical culture was invariably with the Yogins a step to spiritual culture. Hence if any of the Indian systems of physical culture least approaches the modern idea of the science, it is the Yogic system.

Even in India— the home of Yoga—supreme ignorance prevails, especially in the educated circles, about Yoga in general and Haṭha Yoga in particular. The latter is looked upon as merely physical having no spiritual counterpart at all ! Nay, some of the critics go so far as to assert that Haṭha Yoga runs counter to spiritual life ! ! This radically wrong conception of Haṭha Yoga is due to the want of direct knowledge either of the Yogic literature or of the Yogic tradition. No student of Yoga can take even his first lessons without undertaking to discipline his mind through Yamas and Niyamas. Even a Haṭha Yogin cares for his body simply because it is the only instrument through which he can reach his spiritual goal. We want to request our readers, with all the earnestness we can command, not to build their theories on the imperfect or misleading evidence obtained from mock-Yogins who, like depraved tumblers, eke out a living by prostituting some of the physical exercises in Yoga.

So the fact is that the body-building exercises of Yoga never formed a system of physical culture in the modern sense of the word, as they were always designed for spiritual rather than for bodily development !

Here naturally the question arises as to why, in spite of the fact stated above, the Kaivalyadhāma is trying to evolve a Yogic system of physical culture. We are going to take up this very question. But before we do so, we have to say a few words by way of further introduction.

Though the idea of physical culture as stated above is of modern growth, it does not mean that the physical culturists of to-day have created something altogether independent of the body-building exercises of the ancient people. The European and American systems of physical culture are a steady evolution of the Greek and Roman exercises. True, many features of the modern systems were totally absent from those of the olden days. True also, the striking advance made by anatomy and physiology during the last century has given physical culture a scientific air and completeness such as were never enjoyed by it before. But this does not disprove the fact that the modern systems of physical culture are a slow and systematic growth of the ancient bodily exercises obtaining in Greece and Rome.

What applies to Europe and America also holds good in the case of India. Here too physical culturists are busy developing different systems of body-building. In the absence of wild advertisement of the western type, these systems have not yet attracted much attention of the Indian nation as a whole, and are naturally little known to people outside India. No serious attempt has yet been made to expound these systems by their founders. Some stray articles do appear here and there in the vernacular; but an orderly exposition is still to be undertaken for teaching these different systems of Indian physical culture. It is to be noted, however, that everyone of these has its sphere of influence which in some cases is markedly extensive.

These Indian physical culturists also are freely using the material handed down by ancient tradition, for building up their respective systems. Knowledge of anatomy and physiology is largely utilised and the western advance of physical culture is also taken into account. Already the traditional exercises for bodily development were scientifically sound—much more sound than the modern scientific mind would ever suspect. Hence the edifice erected on this foundation is also likely to be sound. Among the non-Yogic systems of physical culture the one that makes the nearest approach to a scientifically sound method, is the system founded by Prof. Mānikrao of Baroda, at whose feet the present writer had the proud privilege of sitting for his lessons in non-Yogic physical culture, and to whose parental care he owes much that has made him what he is now.

Just like the western physical culturists the Indian founders of the different systems of physical culture, have freed the science from all ulterior ends and have placed it on an independent footing. The advocates of Namaskāras have, indeed, imported much from outside into their system; but as they have tried to accomplish everything within the narrow compass of one exercise and as they want to ever tack that exercise on to Sun worship, there is little chance of their system ever being accepted as a system of physical culture in the modern sense of the word.*

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* This statement has been made from a particular point of view and as such should not lead to misunderstanding. The exercise of Namaskāra, as it is being developed by its advocates, has a definite purpose to serve and has certainly a large scope in India. We wish them success from the bottom of our heart.

This brief statement of the position of physical culture in olden and modern times, clearly shows that the science is being reconstructed in India as well as in the West. Attempts are being made to place it on an independent footing and to make it as complete as possible.

Even a cursory study of the modern progress of this science will bring into relief a few developments which cannot fail to attract the attention of the students of Yoga.

i Every day the utility of breathing exercises is being realised to a greater and greater extent.

ii Of all the systems working in the body the nervous system is recognized to be the most important.

iii The spinal column is being assigned its legitimate place in the scheme of bodily exercises.

iv A feeble but marked reaction has started against the disproportionate attention paid to muscle by physical culturists.

v Exercises are being devised to preserve and promote the health of endocrine glands.

Now the Yogic tradition in India has very very emphatically laid stress upon these very features of body-building for more than a score of centuries. True, the Yogins of old built their bodies simply to prepare themselves for spiritual life. But this does not deprive their exercises of the credit of being based on scientific principles the significance of which the modern physical culturist is but slowly realising now. The western founders of the different systems of physical culture are, indeed, busily engaged in devising exercises for the spine, nerves and endocrine glands. But an impartial study of their attempts has convinced us that their exercises are, at best, a poor copy of the marvellous exercises of Yoga.† By using the word *copy*, we never want to suggest that they are borrowing their exercises from Yoga. Almost all of them do not even mention the name of Yoga. And a few of them that mention it, give little credit to the Yogic system. We take all of them to be honest people acting upto their convictions. But when we go through the pages of their books and magazines, we come across exercises which are so strikingly similar to the Yogic exercises, that we cannot help noting the similarity and calling one the copy of the other. We may, however, put the matter in the form of another remark, the truth of which, we are sure, we will be able to prove up to the hilt. The western physical culturists have invented exercises for the development of the spine, nerves and endocrine glands, which were anticipated, centuries before, by the Yogic seers, and which are far from reaching the efficacy of the Yogic exercises available for the same purpose.

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† We are sincerely sorry for making this statement here. We are sorry not because the statement is hasty, nor yet because it is inaccurate ; but simply because it is come too early so far as our publication of the evidence supporting it is concerned. We shall require years

The Indian physical culturists, including the advocates of Namaskāras, have tried their best to take advantage of their knowledge of Yoga. Everyone of them is very particular in publicly declaring that his system has been based on Yogic exercises. Some of them even go to the length of warmly maintaining that their systems are composed purely of Yogic exercises. Of late, in Mahārāshṭra, their is not a single gymnastic institute worth the name, that does not undertake to teach Yogic Āsanas. We are greatly pleased to see this attitude of the Indian physical culturists towards Yoga. But we are sorry to say that in most of the cases the fundamental principles underlying the Yogic system of physical culture are but imperfectly understood, and the combination of Yogic and non-Yogic exercises that these people are attempting, is something far from being scientifically satisfactory. As, however, the Indian physical culturists are maintaining a reverential attitude towards Yoga,

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Continued

before we fully place before the public the evidence that we have collected even upto now. Every year our labours are largely adding to the original stock. We have to request our readers, therefore, not to take the statement on trust but to wait and scan our evidence as we produce it; and accept the truth of the statement only when they are convinced.

there is every possibility of their one day fully and rightly utilising the extremely valuable material available in Yogic culture.

Even at the risk of being a little irrelevant, we wish to say a few words to the physical culturists of India. Barring a few honourable exceptions, they are not as well equipped with the knowledge of modern sciences necessary for their work, as the western people labouring in the same field are. The western physical culturists are, day by day, bringing themselves into a closer touch with medical science, psychology, socialogy etc.; and the thoroughness with which they work deserves our best congratulations. Their restless industry and untiring patience are virtues worth anybody's imitation. If all the physical culturists in India work with the patience, industry and thoroughness of their western brethren, Indian systems are sure to shine with greater glory, and come to occupy their legitimate positions among the systems of the world.

In the discussion preceding the last paragraph two points have been made out :

i The science of physical culture in the modern sense of the word, is of recent growth in the West and most probably also in India. In making it independent and self-contained, it is being freed from its dependence upon games, military training etc.

ii In its reconstruction which is going on everywhere, it is tending to emphasize features which are characteristic of Yogic system of physical culture.

We are quite conscious that two questions must have been repeatedly troubling a sceptic reader of our journal and especially of this article. They are—

i Whether the traditional Yoga-Vidyā had any system of physical culture according to the modern idea of the science.

ii Whether evolving a physical culture system out of the traditional Yoga-Vidyā, is not prostituting the latter.

In one of the foregoing paragraphs we have very frankly admitted that the body-building exercises of Yoga never formed a system of physical culture in the modern sense of the word. This admission should not, however, be construed to mean that the Yogic exercises are not capable of being organized in such a way as would yield a self-contained and independent system of physical culture. After disposing off the second question raised above, we propose first to give a list of Yogic exercises that would go to form an entire system of physical culture, even in the modern sense of the word. We shall then notice some of the principles upon which an ideal system of physical culture should be based. And lastly we will examine the Yogic exercises, with a special reference to the Āsanas, and decide whether most of these principles underlie the Yogic exercises and whether these exercises have a claim to constitute a system of physical culture.

The second question we answer emphatically in the negative. To take advantage of a part of Yoga-Vidyā for a lower ideal is certainly not prostituting it. Picking up a few exercises and practising them for physical culture exclusively would not bring into discredit the science of Yoga. On the contrary it should set a premium upon it. In our extensive therapeutical work in the field of Yoga, we have invariably seen that the patients' faith in Yoga as a system of spiritual culture is greatly strengthened by the bodily advantages he derives. We would be doing a definite disservice to Yoga, if we degrade the whole of it merely to a system of physical culture or therapeutics. But so long as we are ever emphasizing the fact that the Yoga is principally a system of spiritual culture and only incidentally a system of physical culture, there is no danger of our debasing the science.

Again when we see the imperfect attempts of Indian physical culturists to draw upon Yoga in developing their systems, we think it to be our duty to make a scientific attempt to evolve a Yogic system of physical culture and help our brethren that have already started the work. This attempt, if successful, will avoid much misunderstanding that prevails today, owing to a wrong use of Yogic exercises.

In formulating the scheme of Yogic physical culture we would fix upon the Yogic exercises irrespective of their spiritual value. Only their physical utility would be taken into account. The following exercises would constitute a self-contained system of physical culture.

Āsanas

1 S’īrshāsana.
2 Sarvān̄gāsana.
3 Matsyāsana.
4 Halāsana.
5 Bhujan̄gāsana.
6 S’alabhasana.
7 Dhanurāsana
8 Ardha-Matsyendrāsana.
9 Mayurāsana.
10 Pas’chimatāna.
11 S’avāsana.
12 Padmāsana.
13 Siddhāsana.

Bandhas

1 Jālandhara.
2 Uḍḍiyāna.
3 Mūla.

Mudrās

1 As’vinī-Mudrā.
2 Yoga-Mudrā.

Kriyās

1 Nauli.
2 Dhauti.
3 Basti.

Prāṇāyāmas

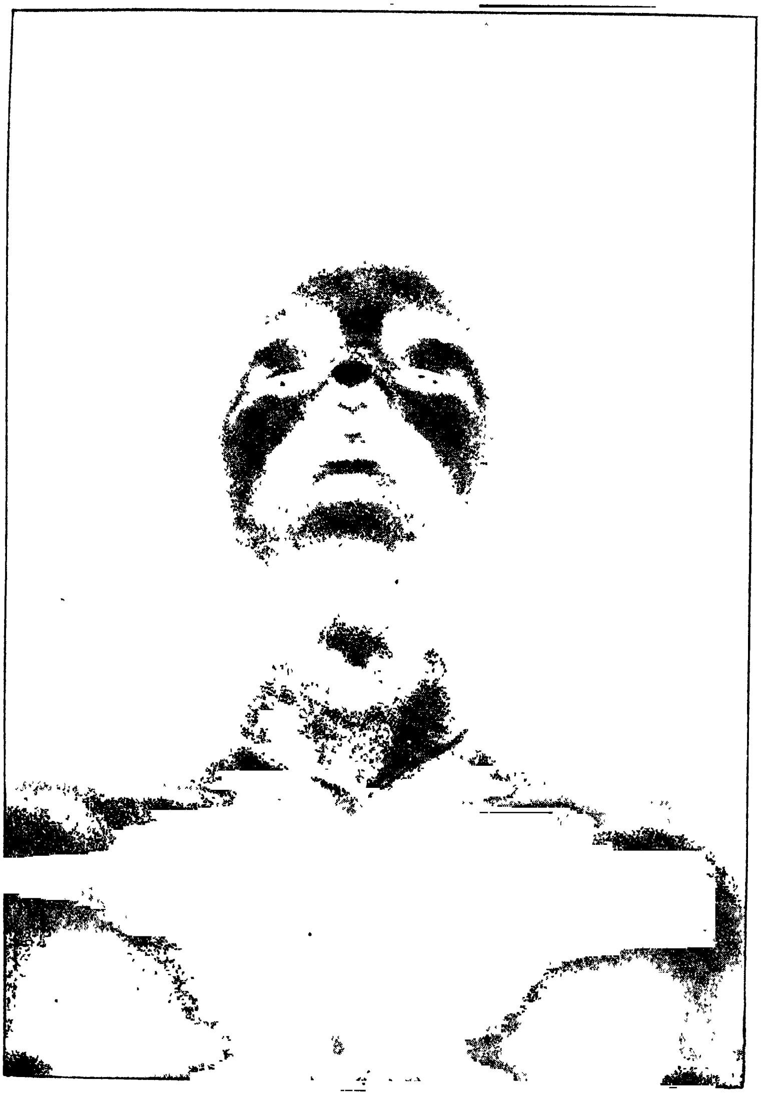
1 Ujjāyī.
2 Bhastrikā.

(*To be continued*)

N. B.—The Director of the Kaivalyadhāma entreats every man of means to show his active sympathy for the Ās'rama.

The Popular Section

Fig. XCII



Nāsāgra-Drishṭi or The Nasal Gaze.

NĀSĀGRA-DṚISHṬI

or

THE NASAL GAZE

Fixing one's eyes upon one's tip of the nose is called Nāsāgra-Dṛishṭi in Sanskṛita. It is illustrated in Fig. XCII. It may be practised as a part of Padmāsana or independent of it. In the accompanying picture, the head is a little thrown back with a view to make the eyeballs visible.

The Nasal Gaze is a fine exercise for the wandering mind. Its practice if undertaken with zest and carried over a period of some months continuously, has a perceptibly beneficial effect upon the unsteady mind.

Caution— The Nasal Gaze directly works upon the brain through the optic nerves. Everybody should, therefore, develop this gaze very slowly and cautiously. Persons with weak nerves are warned not to undertake this practice except under expert supervision.

N. B. This and the next three exercises have been given here simply to enable our readers to understand the technique of the two poses Padmāsana and Siddhāsana. Although the four exercises are being practised and taught in the Ās'rama for purposes of spiritual and physical cultures, they are yet to be fully studied in the light of modern sciences. Hence no details have been recorded here.

BHRŪMADHYA-DṚISHṬI

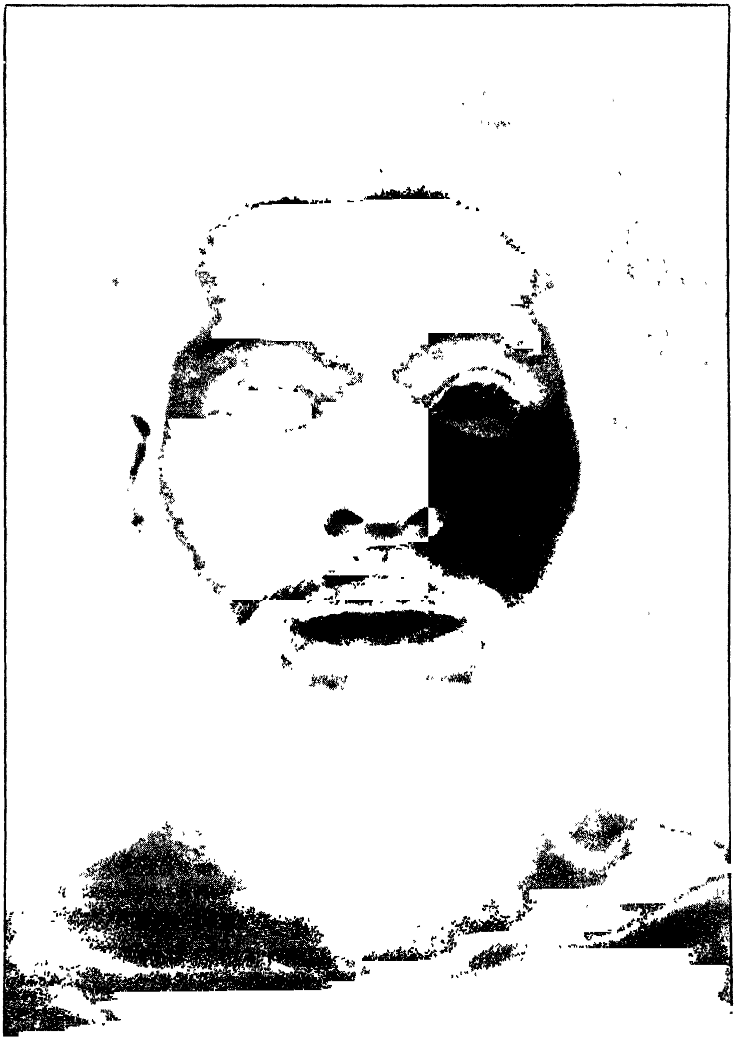
or

THE FRONTAL GAZE

Fixing one's eyes between the eyebrows is called Bhrūmadhya-Dṛishṭi in Sanskṛita. It is illustrated in Fig. XCIII. It may be practised as a part of Siddhāsana or independent of it.

Like the Nasal Gaze, the Frontal Gaze is a fine exercise for the unsteady mind. But the advice and caution given in the case of the former are equally applicable to the case of the latter. Hence they should be carefully borne in mind by the enthusiastic student of Yoga.

Fig. XCIII



Bhrūmadhya-Drishṭi or The Frontal Gaze.

MŪLA-BANDHA

or

THE ANAL CONTRACTION

Mūla-Bandha is an exercise which *mainly* consists in forcibly contracting the anal sphincters. It also requires the perineum to be closely pressed by the heel, as illustrated in Fig. XCVIII and as described in the technique of Siddhāsana.

Mūla-Bandha may be practised as a part of Siddhāsana or independent of it.

There are two anal sphincters, one internal and the other external, situated at the end of the rectum. Both are formed by circular muscles, the external sphincter constituting the anus.

Although Anal Contraction alone goes to form Mūla-Bandha, in contracting the anus one necessarily contracts the whole pelvic region. Hence virtually Mūla-Bandha is an exercise of pelvic contraction.

This Mūla-Bandha is intended to work upon the central and sympathetic nervous systems through the nerve terminals in the anal sphincters. It is called Mūla-Bandha because it first concerns itself with the lower ends of the nervous system in the human trunk. Details of the scientific study of this Bandha will be published when they will be ready.

Caution—A mistake in the practice of this Bandha leads to hard constipation and upsets the digestive system. The genitals are also involved in this contraction and a mistake in its execution may result in some trouble in that direction also. Hence students of Yoga are advised to proceed systematically into this business.

JĀLANDHARA-BANDHA

or

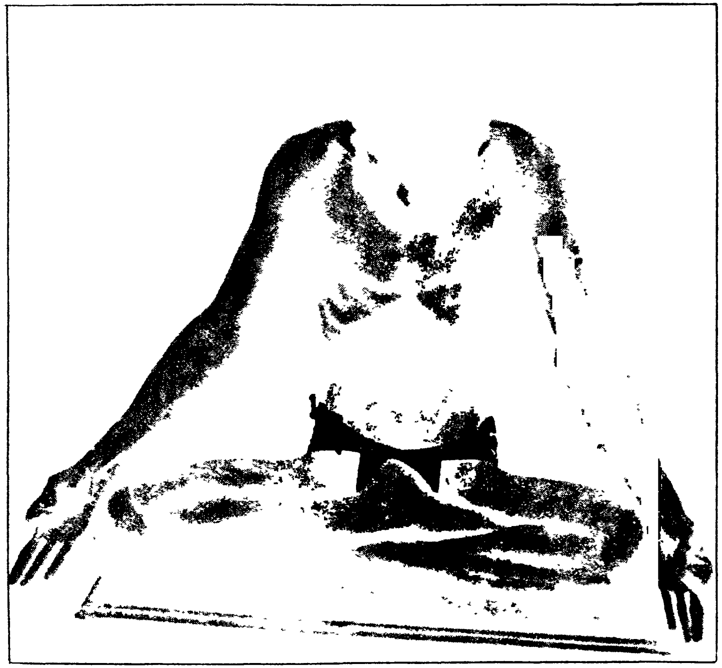
THE CHIN-LOCK

Jālandhara-Bandha requires the chin to be closely pressed against the chest. The front and side views of this exercise have been given in Figs. XCIV and XCV respectively.

The Chin-Lock was first explained in the technique of the Pan-Physical Pose. (See P. 54, Vol. I, Y. M). The chin is to be closely set in the jugular notch with the necessary bent of the neck and the head. This has been shown in the pictures of Padmāsana and Siddhāsana According to some traditions, however, it is not set in that notch, but pressed against the chest further down about four fingers below it. Figs. XCIV and XCV illustrate this. The chin-lock may be practised as a part of Padmāsana and Siddhāsana or independent of them.

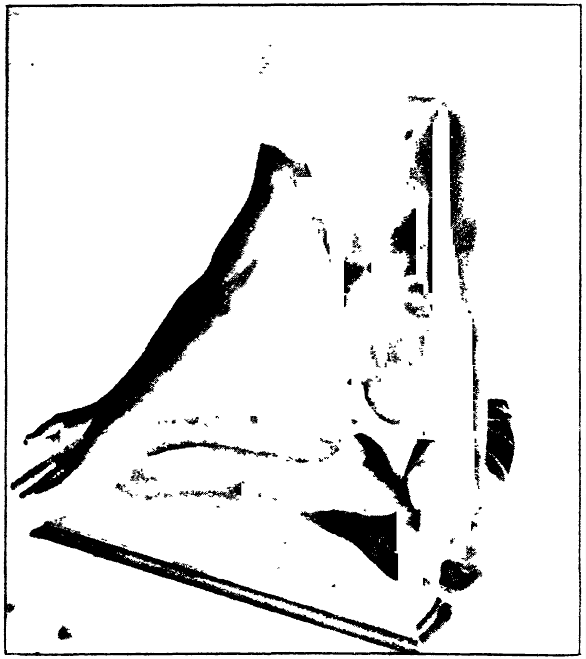
This Bandha exercises an upward pull upon the spine and *most probably* upon the spinal cord, and thus works upon the brain. The Yogic tradition traces the name Jālandhara-Bandha to this circumstance, the word Jāla referring to the brain and to the nerves passing through the neck, and Dhara denoting the upward pull. Is it possible for the name of the Bandha to be taken from the great Yogin Jālandhara, who was, perhaps, its inventor, or at any rate, its famous exponent ?

Fig. XCIV



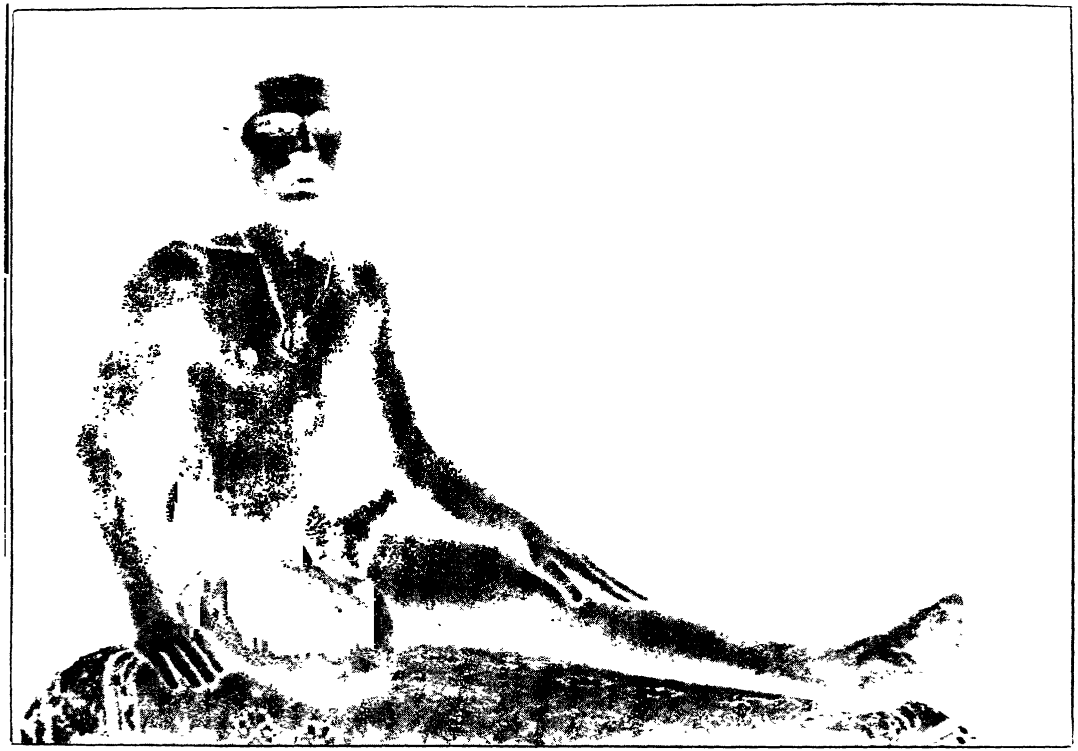
Jālandhara-Bandha or The Chin-Lock.
(Front View)

Fig. XCV



Jālandhara-Bandha or The Chin-Lock
(Side View)

Fig. XCVI



Preparation for Padmāsana.

PADMĀSANA

or

THE LOTUS POSE

THE NAME:—

This pose is called Padmāsana because it is in imitation of the lotus that the hands and feet are arranged in this Āsana. Padma, in Ṣanskṛita, means a lotus. Possibly the two feet placed on the opposite thighs represent the lotus leaves, and the two hands arranged one above the other stand for the blooming lotus. Fig. XCVII illustrates the full pose.

THE TECHNIQUE:—

The student first takes his seat with his legs fully stretched out. He then bends his right leg in the knee-joint; and folding it upon itself, sets the same in the opposite hip-joint, so as to make the foot lie stretching at the root of the thigh with its sole upturned. (See Fig. XCVI). The other leg is similarly folded and set in the opposite hip-joint. Both the heels he adjusts in such a way that they almost meet in front of the *pubic* bones and each of them presses on the abdominal portion adjacent to it. (See Fig. XCVII). Then on the heels thus brought together, the left hand is spread out with its back touching the heels and its palm upturned. The right hand is placed upon the left in the same manner. The eyes are directed to the nose-tip as described on P. 223; and the chin-lock is formed after the manner indicated on P. 226. With the anal contraction treated on P. 225, the technique of the Lotus Pose is completed. It is needless to add that except for the neck, the spine is to be maintained erect.

The most important features of Padmāsana are the two Bandhas—Jālandhara and Mūla. As these are to be cautiously practised, it is always desirable, for the student of Yoga, first to pick up the Bandhas and then start with this pose.

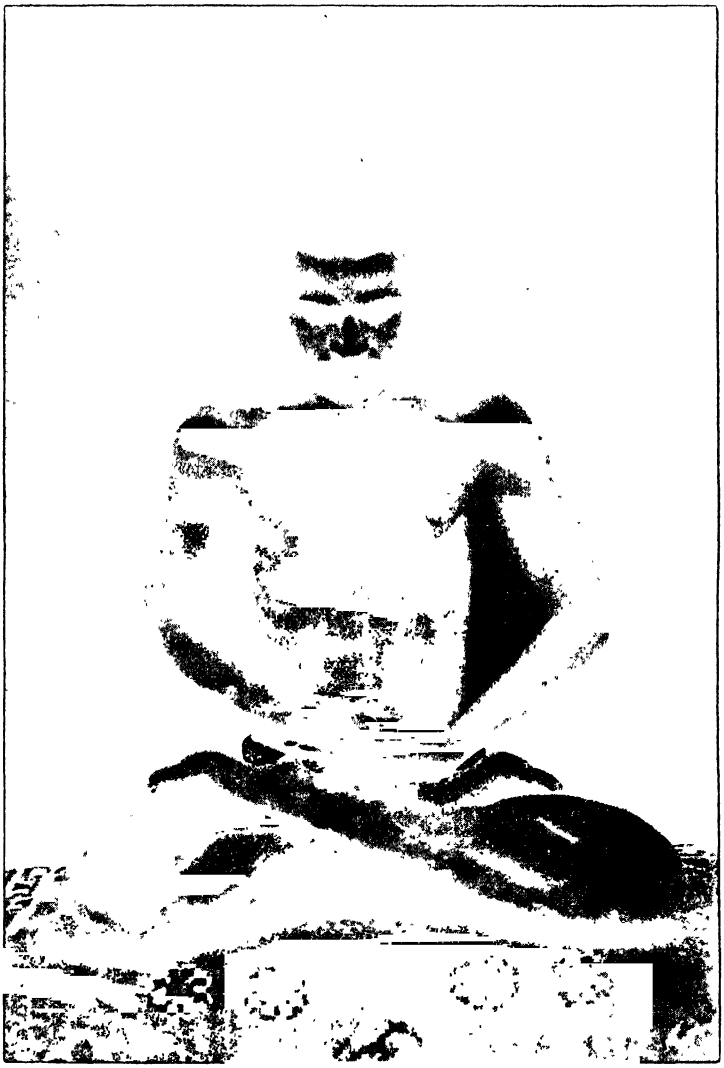
CAUTION:—

In India many people are desirous of sitting in Padmāsana for their daily prayers. We advise these people to assume the Lotus Pose without the Bandhas, if they have not already picked them up successfully. The advice and caution given in the notes on these Bandhas, also hold good in the case of Padmāsana, if the student is anxious to go through the complete technique of this posture.

NOTE—

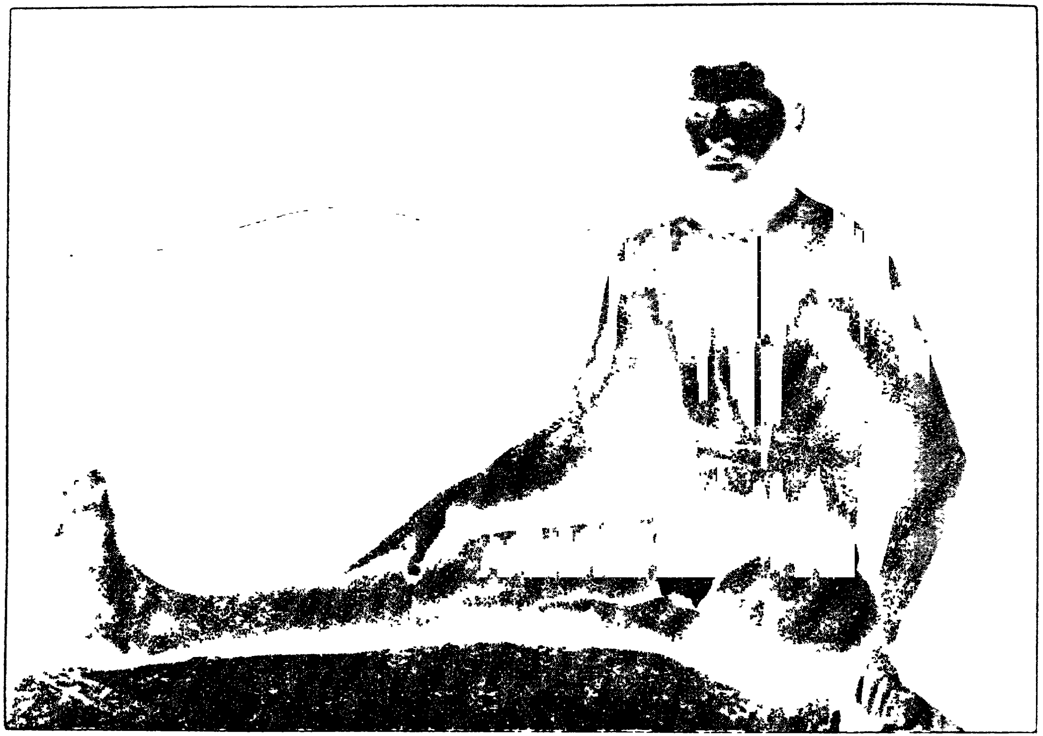
This and the next Āsana have been given here simply to complete our scheme of Yogic poses. Our study of these postures according to the sciences of the day, is still in progress. Hence we abstain from giving any more details here. When practised without Bandhas, this Āsana may be continued for any length of time, provided one can sit in it all the while without any sense of uncomfortableness.

Fig. XCVII



Padmāsana or The Lotus Pose.

Fig. XCVIII



Preparation for Siddhāsana.

SIDDHĀSANA

or

THE ACCOMPLISHED POSE

THE NAME:—

The pose is called Siddhāsana because it is a favourite of the accomplished Yogins. Siddha, in Sanskrita, means an adept.

THE TECHNIQUE:—

The student first takes his seat with his legs fully stretched out. He then bends his left leg in the knee-joint; and folding it upon itself, sets its heel tightly against the perineum. (Vide Fig. XCVIII). In order to get the perineum clear for this purpose, he has first to hold up his genitals with the left hand, for the right hand is occupied in setting the heel in its proper place. The sole of the left foot should be closely in touch with the right thigh. No attempt should be made to sit on the heel. That is a wrong procedure, because pressure is to be exerted on the perineum and not on the anus. The adjusted heel should feel the hard touch of the bones on the two sides of the perineum. After the left leg is given its proper position, the genitals should be arranged within the space available between the left thigh and the left calf. This being done the right leg should be folded after the manner of the left, its heel being placed against the *pubic* bones just above the penis. (See Fig. XCIX). The right sole should spread along the left thigh, the lower border of the right foot being thrust between the left thigh and the left calf. Care must be taken not to hurt the genitals. Generally they can be accommodated below the right heel. But if they cannot find sufficient space there, the testes may be lodged there and the penis may be made to lie outside the folded legs. Under no circumstances undesirable pressure should be put upon any of the organs concerned.

The chin is set against the chest, just as in Padmāsana, to form the Jālandhara-Bandha. The eyes, this time, do not, however, gaze at the tip of the nose; but are directed between the eyebrows, securing Bhrūmadhya-Driṣhṭi for the student. Except for this bent of the neck the spine is to be erect.

The hands and fingers may be arranged as shown in Fig. XCIX or the hands may rest on the knees, touching them with their palms.

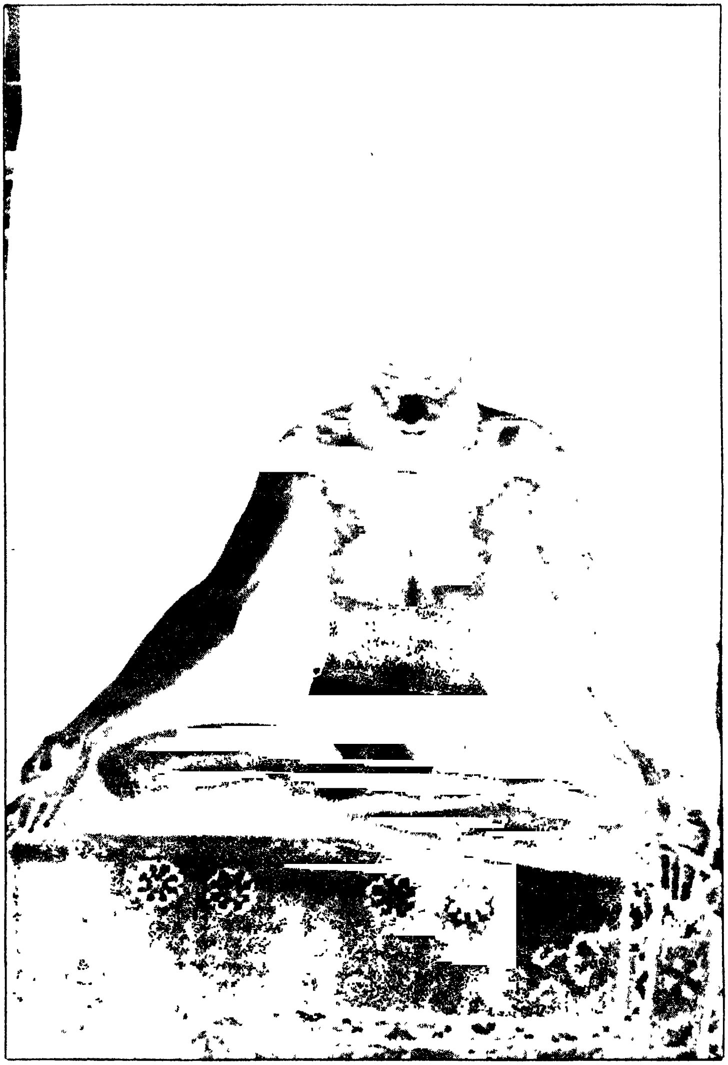
The pose should be developed gradually avoiding every possibility of uncomfortable pressure. The period of time given to its daily practice should increase slowly.

NOTE—

In some ot the vernacular books on Yoga, the pose is said to affect the sexual powers adversely. So far as our experience goes, there is little evidence in support of this view, in the case of healthy persons. It is, however, desirable not to exceed an hour's practice, without special permission of an expert.

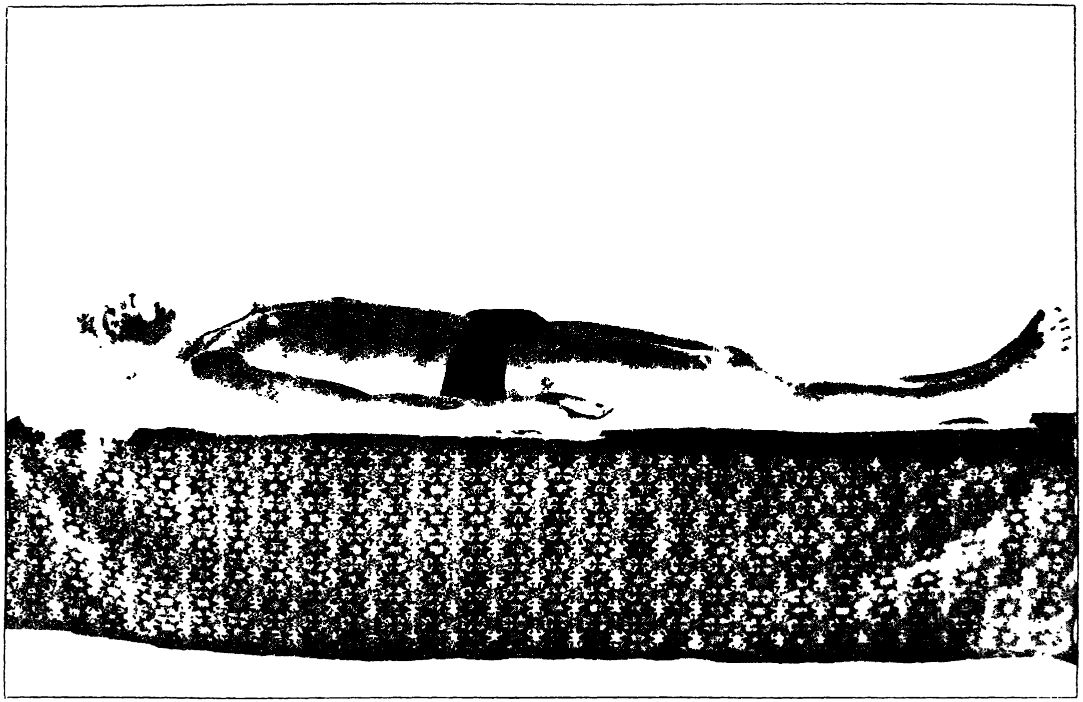
This and the preceding Āsana are principally practised for spiritual culture. When rightly advised they are also available for purposes of physical culture and therapeutics.

Fig. XCIX



Siddhāsana or The Accomplished Pose.

Fig. C



S'avāsana or The Dead Pose.

S'AVĀSANA

or

THE DEAD POSE

THE NAME:—

The pose is called S'avāsana, because it requires complete relaxation of the muscles as in the case of a dead person, whose position the Yogic student is also made to imitate in the practice of this posture.

THE TECHNIQUE:—

The technique is very simple. The student is to lie on his back, as shown in Fig. C; and fully relax his muscles. It is to be noted here that our muscles remain slightly contracted even when we lie down for rest in a waking condition. Even this slight contraction is to be avoided in the Dead Pose. This requires an effort of will and concentration a little. The student should take a particular part of the body and thoroughly relax its muscles. Then he should concentrate upon that part and imagine that every muscle tissue in that part is further relaxed and is, as it were, colapsing. Constant practice of this procedure will enable the student to bring about full relaxation of different muscles.

Ordinarily he should start with relaxing the thorax. The abdomen should be taken up next. The lower and upper extremities should follow the abdomen, and the brain should come up last The eyes may be kept open or shut up.

Breathing should be rhythmical and should be developed as described in the following paragraphs.

1 While lying in S'avāsana, the student should first concentrate his mind. After a minute of concentration he should simply watch his breath as it flows. No attempt should be made at controlling it. This may be done for about 2 to 3 minutes to start with. Afterwards the time may increase to 10 minutes.

2 In about a fortnight's time, the student will find that the breath as it ordinarily flows is very irregular. Not only the inhalation and exhalation are unequal, but each is not very uniform in itself. This uneven and irregular breathing is often responsible for ill health and needs improvement. So the outgoing and incoming breath should be made to occupy the same length of time. No effort should be made to increase their volume, however. A rhythmical flow is all that is wanted. This may be practised for nearly quarter of an hour every day. In the beginning a sense of suffocation may be experienced but it will soon disappear.

3 In a month or so the student will feel very comfortable at the rhythmical breathing. He should then try to increase the volume of his inhalation and exhalation by drawing slightly deeper breaths and letting off air proportionately. No violence is to be practised. Breathing is to be as smooth and slow as before, only the breaths are to be very slightly deeper. All the while the mind is to be concentrated upon the moving breath.

POINTS OF STUDY:—

Every muscle is relaxed and is prepared for better contraction. Owing to the relaxation of the whole muscular system, blood circulation becomes freer throughout the body. Every nerve gets rest and the brain feels greatly refreshed.

NOTE —

Rhythmical breathing should be developed very cautiously. Under no circumstances one is to strain himself. Everything should be comfortable and pleasing. Even after practice, not more than 10 minutes at a time are allowed for patients with weak lungs, although healthy persons may devote as much time to it as they please. Even the slightest tendency to fall asleep should be promptly checked.

Miscellaneous

RULES AND REGULATIONS

for

ADMISSON OF STUDENTS TO THE ĀS’RAMA

General

1 No one will be admitted as a student to the Ās’rama that does not come to it for spiritual evolution.

2 A studentship is available at the Ās’rama only to those who look upon Yoga as a means to self-realisation.

3 No male* below the age of puberty and no female* of whatever description will be admitted to the Ās’rama as a student.

4 Moral excellence is an absolutely necessary qualification for being admitted to a studentship in the As’rama.

5 No one that is suffering from a serious defect in his body or brain will be admitted to the Ās’rama as a student.

6 Students who are still under the guardianship of an elderly person shall not be admitted to the Ās’rama without the consent of their guardians.

7 Admission as students will be granted only to those who are either known to some one of the present inmates of the Ās’rama, or to those who can produce satisfactory references from some respectable person of their place.

8 A probationary period of two to six months according to the discretion of the Director, is compulsory for everyone before he is confirmed in his studentship.

9 Students when admitted will have to obey the discipline of the Ās’rama in every detail.

10 Even a day’s absence without leave from the Ās’rama will be considered a serious breach of discipline.

---

* Howsoever anxious we may be to provide for the Yogic instruction of both these classes of candidates, our present circumstances put the thing practically out of the question.

11 This or any other serious breach of discipline will entail an immediate expulsion from the Ās'rama.

12 There are three types of studentships instituted in the Ās'rama : (1) Short Period Paying Studentships; (2) Short Period Working Studentships; (3) Permanent Studentships.*

13 No student falling under any of these categories will be charged any fees for Yogic instruction which will ever be given absolutely gratis.

14 Persons losing their studentship not for any serious breach of discipline, are not precluded from applying for a studentship again.

15 First two types of studentships are available even to married persons provided they undertake to follow the Yogic code of sex morality. The last type is open to celibates only.

Short Period Paying Studentships

16 Any one that satisfies the general conditions and undertakes to pay rupees 35 in advance every month for his actual expenses, will be admitted to the Ās'rama for a Short Period Paying Studentship. The Director, however, reserves to himself the right of refusing admission to candidates and is not bound to explain reasons for such a refusal.

17 Short Period Paying Studentships are available for a minimum period of six months and a maximum period of six years only.

18 Should a candidate wish to stay in the Ās'rama for a period less than six months or more than six years, he should do so either as a Visitor or as a Permanent Student respectively.

19 Not more than two months' leave will be granted to a student in a year, every time absence being allowed strictly on grounds of emergency.

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* Another type of permanent studentships is yet to be instituted, rules and regulations concerning which will be published later on.

Short Period Working Studentships

20 Candidates that satisfy the general conditions but are not in a position to pay or being in a position do not wish to do so, may be given Short Period Working Studentships in the Ās'rama, provided they undertake to do such work in the Ās'rama as may be assigned to them from time to time by the Director or in the absence of the Director by his representative.

21 The character and amount of work will be such as will not interfere with the Yogic practices of such students. But in times of emergency they are expected voluntarily to look to the interest of the Ās'rama even at some sacrifice of their Yogic studies, such additional work being sure to help them in their spiritual evolution.

22 Candidates to be admitted to this class must not only be very sound in body and mind, but must possess intense hankering for spiritual evolution through Yogic life.

23 No candidate will get a Working Studentship at the Ās'rama if he has completed his thirtieth year. The younger the candidate the more preferable he will be.

24 No candidate that has directly to shoulder any family responsibilities will be admitted to this class of studentship.

25 The Ās'rama will be responsible not only for the boarding and lodging of the working students during their stay at the Ās'rama, but also for the satisfaction of their ordinary wants as students of Yoga. Should a student, however, incur expenses even in the performance of his legitimate duties in other capacities, he should make his own arrangements to defray them.

26 Not more than one month's leave will be granted to a student in a year, every time absence being allowed, strictly on grounds of emergency.

27 Working Studentships are available only for a minimum period of four years.

28 Students of this class must offer themselves as subjects for any Yogic experimentation that may be conducted on behalf of the Ās'rama.

Permanent Studentships

29 Permanent Studentships are available only to those that want to make Yoga their life work, completely identifying themselves with the Ās'rama and its activities in the Yogic field.

30 Only those celibates that are from sixteen to twenty years of age and that have full confidence in their capacity to continue their chaste celibacy to the thirty-sixth year of their life, will be admitted to this class.

31 Any family tie that would disturb an exclusive Yogic life will constitute a disqualification for a candidate of this class.

32 Permanent Studentships will be available only to those that have a special aptitude for Yogic culture.

33 The Ās'rama undertakes to satisfy all legitimate needs of a permanent student while he is attached to the Ās'rama.

34 After reaching a particular level of spiritual evolution, a permanent student will be admitted to a certain type of membership* in the Ās'rama, securing for him economic independence within the limits of the Ās'rama itself.

35 After the completion of his thirty-sixth year, a permanent student is free to choose whatever walk of life he likes.

Lonavla,
1-10-1926.

Kuvalayānanda
Director, **KAIVALYADHĀMA**

---

* This is yet to be instituted, but a rough idea about it can be had from the Director even now. It will carry with it certain rights giving the member a vote in the management of his particular department.

RULES AND REGULATIONS
for
PATIENTS & VISITORS

1 It is desirable for every gentleman that comes to stay in the Ās'rama even for a day to have his own bedding.

2 Being a hill-station Lonavla is generally cool throughout the year. It is desirable, therefore, for everyone coming to the Ās'rama to have sufficient warm clothing with him.

3 As Lonavla records an average rainfall of 175 inches per year, practically all therapeutical work is suspended from the beginning of July to the middle of September. Patients are, therefore, requested not to venture an expedition to this place during the months noted above.

4 To avoid inconvenience to himself and to the management of the Ās'rama, it is desirable that an intending guest should send beforehand precise information regarding the time of his arrival and the probable period of his stay. If any special arrangements of food etc. are necessary the facts should be clearly intimated.

5 The Ās'rama is strictly for vegetarianism. No non-vegetarian food or tonic would be allowed within the limits of the Ās'rama.

6 Tea and smoke are entirely prohibited within the precincts of the institution.

7 It is desirable that every gentleman coming to the Ās'rama should, as far as possible, conform to the discipline of this place. No unholy act or word should disturb the peace of the Ās'rama.

8 Boarding and lodging are given free of charge for the first two days to every one coming to the Ās'rama. Should any one overstay this period, he is charged rupees 45

per month from the date of his arrival for his actual expenses. These charges should be paid in advance.

9 The servants of the Ās'rama look to the ordinary needs of a patient or a visitor. Should anyone want special menial attendance, he must bring his own servant who will be charged for his actual expenses as well as his master.

10 The concession for the first two days is general. Should a gentleman, however, wish to pay even for these days, the money will be thankfully accepted.

11 No concession can be allowed to anybody absenting himself from the Ās'rama for a day or two. If, however, this period exceeds two days, he will be charged only eight annas per day for the period of his absence, provided he intimates the authorities beforehand.

12 Persons intending to leave the Ās'rama should kindly intimate beforehand the time of their departure.

13 The Ās'rama is being conducted with a religious sentiment. The management is, therefore, always anxious not to be mercenary. Gentlemen coming to the Ās'rama are requested to appreciate this attitude and not to introduce any unpleasant monetary discussions in their dealings with the authorities.

14 The Ās'rama stands for Yoga and Yoga alone. It is hoped, therefore, that the facilities given here will not be used for any other purpose by looking upon the institution either as a general sanitarium or health-home.

15 No fees are charged for Yogic instruction.

16 All Yogic treatment and consultation is given gratis.

17 The Ās'rama undertakes to treat only chronic patients who are not confined to bed. If, however, any acute symptoms develop after a patient is admitted to the Ās'rama, he will get competent medical advise and attend-

ance quite gratis, but will have to pay a moderate charge for the treatment he receives.

18 There is no accommodation for females. They may, however, come for a few hours for consultation and also for instruction if so advised.

NOTE —

Lonavla is a big railway station on the main line of the G. I. P. Railway running from Bombay to Poona some eighty miles away from the former. The Ās'rama is situated at a distance of a little more than a mile from the station. Conveyances are always available at the station by day time. Should a stranger, however, wish to walk down the distance, he can very easily do it, first by inquiring for the Bombay Poona Road and then by tracing the Ās'rama with the help of the signboards which are placed along the said road at convenient distances. Failure to succeed in this enterprise should direct the pedestrian to the local Post Office for more exact and detailed information.

Lonavla,
1-10-1926.

Manager,
KAIVALYADHĀMA

तदेकोऽवशिष्टः शिवः केवलोऽहम् ।
I alone persist : Blissful : Absolute.

ॐ

सोऽहम् ।

Yoga-Mīmāṅsā

EDITED BY

S'RĪMAT KUVALAYĀNANDA

(J. G. Guṇe)

October, 1926

Vol. II **No. 4**

KAIVALYADHĀMA
Post-Lonavla
(Bombay, India).

सर्वं खल्विदं ब्रह्म ।
All this is, indeed, Brahman.

नेह नानास्ति किञ्चन ।
There is nothing here apart from it.

शरीरमाद्यं खलु धर्मसाधनम् ।
Surely Health is the primary requisite of spiritual life.

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ॐ

तदेकोऽवशिष्टः शिवः केवलोऽहम् ।

सोऽहम् ।

YOGA-MĪMĀṄSĀ

VOL. II OCTOBER, 1926 NO. 4

Editorial Notes

MAY the Maker of all make this journal a success Blessed is the name of the Lord. May He bless the workers of the Ās'rama with a happy and prosperous career as servants of the world which is only the Lord Himself objectified. May He, that has created us in His infinite wisdom, lead us to the light that is beyond all darkness.

* * *

THIS is the last number of the second volume. Owing to various difficulties and pressure of work in other departments of the Ās'rama, nearly all the numbers of this volume were published with extreme irregularity. Luckily for us we have now got colleagues who can help us in our undertaking and we strongly hope to bring out the Yoga-Mīmāṅsā punctually hereafter.

* * *

THE subscriptions paid at the beginning of 1926 were meant for Vol. II which is now completed. It will be seen, therefore, that our subscribers had to suffer only delay in receiving our publication. They had not to entail any pecuniary loss. Looking to the peculiarly original type of work that we have undertaken, our readers will please excuse us for our irregularity and continue their patronage as heretofore. With the next number the third volume begins and we have to request our readers to send us difinite information regarding their intention to remain as subscribers or otherwise. A printed card is being circulated herewith. Our readers will do well to send intimation as early as possible.

* * *

WE owe an apology to the editors and publishers of those papers and periodicals which are being exchanged with our journal. We have certainly drawn too much upon their kindness by our late publications. We hope they will not mind this much and will continue to extend the same kindness to us hereafter that they have shown us upto now.

* * *

AN appeal on behalf of the Director of the Ās'rama, is published in the miscellaneous matter appearing in this issue It briefly sums up the progress we have made during the last three years. We are by no means satisfied with the little success we have achieved by the grace of the Lord. But it can be seen from the appreciations we have extracted therein, that our work is being received with great sympathy and enthusiasm by many persons of light and leading. We beg to draw our readers' attention especially to the impressions of the Hon'ble Sir Chunilal Mehta, the Finance Member of the Government of Bombay, who was kind enough to honour us with a visit His remarks and those of others will show that the As'rama deserves the active sympathy of all men of means. We earnestly request those of our readers that are in a position to help us, to do so at their earliest opportunity. They can at least send us new subscribers and thus help us in our mission.

* * *

AT the end of the first volume we had declared our intention of dividing the Yoga-Mīmāṁsā into different units of two volumes each. We have tried to give a sort of completeness to the first two volumes by finishing all the articles except one. Also the note on the digestive apparatus is to be continued. Three exhaustive indexes of the two volumes are given at the end of this number.

We are sorry to see, however, that our idea of making the next two volumes independent, of the first two, does not seem to be practicable. Even if we were to issue a companion volume containing all the scientific notes of the first two volumes, there would be very frequent references to the experiments and articles that have appeared upto now. Even though we were to repeat particular portions, it would simply make the subsequent articles more difficult to understand, for want of references to detailed discussions. Under these circumstances, we have to give up the idea of making every two volumes independent.

As the matter appearing in our journal, however, is of permanent interest, there is no danger of its getting stale for many years to come So the new subscribers, if they cannot purchase the back volumes when subscribing for the current one, will do well to start by purchasing the back volumes serially. So instead of going in for the third volume, they should go in for the first volume to start with and overtake the Yoga-Mīmāṅsa publications at some future date by bringing their purchases upto date or be only a couple of years behind the other readers, buying their volumes two years late. For the convenience of the new subscribers the second volume will be sold at the original price upto the end of June 1928.

* * *

WE cannot close these notes without recording our heart-felt thanks to all the people that have helped us directly or indirectly in our work.

* * *

MAY the Lord that enabled us to found the Ās'rama, give us strength enough to carry on its work! May He ever widen the circle of our sympathizers and thus allow us to serve Him and His children to the best of our ability!

READERS

Kindly do not fail to get your name registered as a subscriber for Vol. III, by posting, even to-day, the accompanying card duly signed and stamped. It is hoped that you will enter your full name and address in legible handwriting, clearly stating your Post Office. Please do not lose this opportunity of studying or helping the study of this ancient Yogic culture of the Aryans.

The first number of volume III will be posted on the 30th of January 1928. If you do not send definite instructions or remittances, so as to reach the Yoga-Mīmāṅsā Office on or before the 20th of January, it will be taken for granted that you want to continue as a subscriber and that you want us to send you the number per V. P. P., charging you for the next volume.

If you are an inland subscriber, Money Order system is cheaper for you than the V. P. system. It will save you 4 annas and will save us much trouble. If you are a foreig subscriber residing in British Colonies, Possessions or Age cies, remittance in British Postal Orders or in Sterlin Currency Notes is cheaper and quicker for you and more convenient for us than payment through Foreign Money Order system. If you happen to be an American sub scriber, you can best send us your remittance by a cheq or Dollar Currency Notes.

MANAGER, YOGA-MĪMĀṄSĀ OFFICE,
POST— LONAVLA,
(Bombay, India.)

The Scientific Section

SYSTEM OF TRANSLITERATION

Letters, their sounds and a description of these sounds:—

अ	A	Pronounce	'A'	like	'u'	in	'but'.
आ	Ā	„	'Ā'	„	'a'	„	'far'.
इ	I	„	'I'	„	'i'	„	'pin'.
ई	Ī	„	'Ī'	„	'ee'	„	'feel'.
उ	U	„	'U'	„	'u	„	'fulsome'.
ऊ	Ū	„	'Ū'	„	'oo'	„	'wool'.
ऋ	Ṛi	„	'Ṛi'	„	'rö'	„	German.
ॠ	Ṝi	„	'Ṝi'	„	„	„	„ with a strong accent.
ऌ	Ḷi	,	'Ḷi'	„	'lö'	„	German.
ए	E	„	'E'	„	'a'	„	'fate'.
ऐ	AI	„	'AI'	„	'ai'	„	'aisle' but not drawled out.
ओ	O	„	'O'	„	'o'	„	'over'.
औ	AU	„	'AU'	„	'ou'	„	'ounce' but not drawled out.
क	KA	„	'K'	„	'k'	„	'kill'.
ख	KHA	„	'KH'	„	'kh'	„	'ink-horn' or like 'ch' in 'Loch' (Scottish).
ग	GA	„	'G'	„	'g'	„	'girl'.
घ	GHA	„	'GH'	„	'gh'	„	'log-house' or 'ghee'.
ङ	N̄A	„	'N̄'	„	'n'	„	'king' or 'link'.
च	CHA	„	'CH'	„	'ch'	„	'church'.
छ	CHHA	„	'CHH'	„	the second 'ch' in 'churchill'		
ज	JA	„	'J'	„	'j'	in	'join'.
झ	JHA	„	'JH'	„	palatal 'z' as in 'azure'.		
ञ	N'A	„	'N″'	„	'n'	in	'pinch'.
ट	ṬA	„	'Ṭ'	„	't'	„	'tub'.
ठ	ṬHA	„	'ṬH'	„	'th'	„	'pot-house'.

SYSTEM OF TRANSLITERATION

Letters, their sounds, and a description of these sounds:—

ड	ḌA	Pronounce	'Ḍ'	like	'd'	in	'dog.'
ढ	ḌHA	„	'ḌH'	„	'dh'	„	'mad-house'.
ण	ṆA	„	'Ṇ'	„	'n'	„	'splinter' or 'and'.
त	TA	„	'T'	like	dental 't'	as in	'thin', or like the French 'T'.
थ	THA	„	'TH'	„	'th'	in	'thunder'.
द	DA	„	'D'	„	'th'	„	'then'.
ध	DHA	„	'DH'	„	'th'	„	'this'.
न	NA	„	'N'	„	'n'	„	'no'.
प	PA	„	'P'	„	'p'	„	'paw'.
फ	PHA	„	'PH'	„	'ph'	„	'top-heavy', or 'gh' in 'laugh'.
ब	BA	„	'B'	„	'b'	„	'balm'.
भ	BHA	„	'BH'	„	'bh'	„	'hob-house'.
म	MA	„	'M'	„	'm'	„	'mat'.
य	YA	„	'Y'	„	'y'	„	'yawn'.
र	RA	„	'R'	„	'r'	„	'rub'.
ल	LA	„	'L'	„	'l'	„	'lo'.
व	VA	„	'V'	„	'w'	„	'wane'.
श	S'A	„	'S''	„	'sh'	„	'ashes'.
ष	SHA	„	'SH'	„	a strong lingual with rounded lips.		
स	SA	„	'S'	„	's'	in	'sun'.
ह	HA	„	'H'	„	'h'	„	'hum'.
ळ	ḶA	A dento-lingual pronounced with a little rounding of lips.					

Visarga—Ḥ; Nasalized म् as in संयम—ṁ;

Nasalized न् as in मीमांसा—ṅ.

CAN WE DEVELOP MECHANO-YOGIC THERAPY ?

BY *Mechano-Yogic Therapy* we propose to denote that system of treatment where the physiological advantages of Yogic exercises would be secured from mechanical contrivances used by patients who will themselves remain absolutely or at least partially passive.

Now the possibility of developing this new therapy will depend upon the possibility of finding out suitable mechanical contrivances which could be used on the same principles that underlie Yogic Therapy and which would lead to the same results. So before we are in a position to answer the question heading the article, we must study the basic principles of Yogic Therapy, and see how far we can use mechanical appliances upon the same principles.

To the readers of the Yoga-Mīmānsā, it must have been clear by now that we are giving altogether a new foundation to Yogic Therapy. We are basing our researches on the modern physiology, anatomy and pathology. In doing this we have departed from the method of the ancient Yogins who based their therapy upon the Tridosha theory of Vāta, Pitta and Kapha. By doing this we do not at all want to suggest that the old theory was useless or wrong, and that the new sciences are taking us nearer the solution of the problems of life, disease and death. Our view of the matter is that a real solution of these problems will be available when we shall be able to co-ordinate the ancient and modern sciences; and it is with the fond hope of doing this successfully that we have started our work. Modern sciences deal with the grossest of phenomena and are now making a move towards the subtle. We propose to do the same thing. We are studying Yogic practices in their grosser aspects and trying to use them as remedies against the equally grosser conditions of disease, the subtler things will follow as we advance step by step.

But even upon this grosser plane, our researches are not so advanced as to enable us to enunciate the first principles of Yogic Therapy. Again what we have published in the Yoga-Mīmānsā is only a fraction of our entire work accomplished upto now. Under these circumstances, we have to content ourselves by enumerating a few salient features of Yogic Therapy and proceed to consider the question raised in this article.

It is an admitted fact that one of the chief factors responsible for the health of an organ is its nerve supply. If all the nerves that influence and govern the functions of a particular organ are intact, the organ does not degenerate in the ordinary course of things. On the contrary an organ is bound to degenerate, if its nerve supply suffers. We often hear of the eye or ear apparatus being intact and yet the man being either blind or deaf, his optic or auditory nervous mechanism having gone out of order. We have studied in detail, how the degeneration of the nervous mechanism of the bowels leads to constipation.

Now Yogic Therapy treats such diseases by improving the nerve supply by means of Yogic practices. The ancient Yogins have achieved a wonderful success in locating particular centres in the nervous system; both in its central and peripheral parts, which influence very large tracts of the nervous fabric. They have also devised clever exercises that work upon these centres. It is by means of these exercises that the Yogins improve the degenerated nerve supply and restore the diseased organ to health. We have seen how Nauli is able to check constipation by toning up the nerves governing the activity of large bowel.

Next to the influence of the nervous system is the influence of the internal secretions of the ductless glands. There may be a difference of opinion regarding particular theories expounded by the scientists working in the field of Endocrinology. But the overwhelming importance of the endocrine organs, preserving the health of the different bodily structures, is unanimously acknowledged. In Vol. I, No. 3 in our article on the Pan-Physical Pose, we have seen how the defective parathyroids lead to epilepsy. Our exhaustive note on the endocrine organs, published in Vol. II, No. 2, will give a clear idea regarding the supreme value of the endocrine secretions.

Yoga-Shāstra teaches exercises that can restore to health many degenerated endocrine organs. Functional disorders can be very largely helped. How far organic charges yield to Yogic treatment remains yet to be seen. In our article on Sarvāngāsana in Vol. I, No. 1, we have studied how a degenerated thyroid can be improved by the Yogic practice of the Pan-Physical Pose.

Another factor of importance in Yogic Therapy is the strengthening of the muscles that lead to disease by their loss of tone. Weak abdominal muscles leading to constipation are a good case in point. So also the atony of the musculature of the large bowel causing stasis stands on the same level. As a general rule Yogic practices do not *primarily* concern themselves with muscles. But they do not neglect those muscles which largely help physical progress.

Building up a strong abdominal wall by subjecting the abdominal muscles to alternate contraction and relaxation in Uḍḍiyāna and Nauli, has already been noticed in Vol. I. These exercises have been found to be two of the best remedies against constipation.

Still another feature of Yogic Therapy is the removal of offending matter from the different parts of the alimentary canal, by means of muscle movement, or by creating negative pressure inside the said canal. In Vol. I, No. 1, we have seen how Uḍḍiyāna can remove the cecal contents and can shift them lower down the tract. Nauli can accomplish this to a larger extent. At times natural agents such as air and water are used for this purpose. We have discussed Basti with water. But even air is used for the same purpose, although this helps mainly in getting rid of the foul gases.

The last but not the least feature of Yogic Therapy that we may note here, is the promotion of oxygenation, that is, charging the blood with oxygen. This gas has a great value in increasing the vitality of the tissues

Although we have not yet discussed the breathing exercises in this journal, we may mention it here as a truth universally accepted that breathing exercises are a special feature of Yoga. They help oxygenation by throwing out CO_2 and inhaling large quantities of oxygen.

Thus we see that Yogic Therapy is based upon the improvement of the nerves, glands and muscles responsible for the health of the different organs, upon the removal of offending matter and also upon the oxygenation of the blood, these results being brought about by means of Yogic exercises.

Some of these exercises have been mentioned in the foregoing discussion. We now proceed to examine the principal characteristics of these practices.

Many of the exercises are meant to bring a good supply of blood to the degenerated nerves, glands and muscles, and thus to promote their health. In doing this the force of gravity is largely taken advantage of. In S'īrsāsana a richer blood supply is sent to the brain by standing on the head. In Sarvāṅgāsana the man stands on the neck and shoulders, and thus gets a liberal blood flow for his thyroid.

Again the same purpose is accomplished by putting checks at different places on the blood vessels. Thus in Sarvāṅgāsana the carotids are checked by the chin-lock. In Mayurāsana the abdominal aorta is checked before it bifurcates itself in front of the fourth lumbar vertebra and thus a larger blood supply is made available for the digestive organs.

Muscle movement is also used towards the same end, as when Nauli is practised to get a copious blood flow to the abdominal viscera.

Besides taking advantage of gravitation, and making use of checks and muscle movements, massage is very largely employed, and is greatly in evidence in Yogic exercises. Much of this massage is automatic and may be classed as self-massage. For instance, during Nauli, the abdominal muscles gently move across the abdominal viscera and give them a good massage. In breathing exercises, the expanding and contracting lungs give a sort of massage to the heart. The rapid blood circulation in Bhastrīka and the vibrations of the tissues of the whole body, lead to the massage of nearly the whole nervous mechanism and the circulatory system.

At times, however, an external agent is used in the Yogic massage. For instance, in Dhauti a strip of cloth is used for massaging the mucous membrane of the stomach. So also there is one practice which consists of massaging the rectal wall with a lubricated finger.

The use of natural agents such as air and water for flushing the system has already been referred to. Summing up this discussion we find that Yogic Therapy proposes to give health to the degenerated organs by—

i Improving the nerves, glands or muscles responsible for the health of those organs.

ii Removing the offending matter causing pathological conditions therein; and

iii Oxygenating the blood in general.

This is accomplished by—

i Bringing a richer blood supply to the nerves, glands and muscles concerned, with the help of poses and the force of gravity.

ii Massage automatic or otherwise.

iii Muscle movements promoting blood circulation and giving massage.

iv Respiratory exercises.

Now we want to see whether it is possible to construct mechanical contrivances that can take the place of the voluntary actions in these exercises and bring about the desired results.

It is easy to understand that we can, by mechanical means keep the man in a particular pose and get much of the advantage derived from the man's taking the pose unaided. For instance, we can make a man sleep supine on a broad wooden board long enough to cover his entire height. Arrangements may be made at the head side not to allow the head to slide away even when the board is raised on the leg side. The board may be placed at the foot of a wall with the head side touching the ground. This will avoid the possibility of the whole board slipping off when raised at the other end. An iron or wooden stand may be used to support the lifted end of the board. In this way an *inclined plane* will be got ready. The angle this inclined plane will make with the ground, will depend upon the height of the support at the leg side and also upon its position under the length of the wooden board. The support if placed at the end of the leg side will give a very acute angle. This angle will be broadened as the support is adjusted nearer the head side. With this simple contrivance we can secure any angle upto 50°. The man has to lie down in position upon the board and some one has to lift the leg side of it and adjust the supporting stand underneeth so as to make the necessary angle.

The arrangements suggested in the preceding paragraph are the simplest and are such as can be got ready by any man in his house without much trouble. A good mechanic can prepare a decent machine. We propose, as we advance, publishing pictures and descriptions of various contrivances that can be used in Mechano-Yogic Therapy.

Again, if the same wooden board is made of two parts, one of these only 9 inches long adjusted at the head side, and if the two parts be so joined that one might hinge upon the other, and if the man is made to sleep on this board with his neck across the hinging joint, and again the board is raised and supported as in the previous case, it is clear that the man will have a bent at the neck. This bent will not be as sharp as in Sarvāṅgāsana, but it will surely make a near approach to it, if the angle made by the longer part of the board with the ground is broad enough.

Our readers must have seen that the first mechanical adjustment would be a substitute for S'īrshāsana and the second for Sarvāṅgāsana. In this way it is possible to construct contrivances that can take the place of voluntary actions in many of the Āsanas.

We do not propose to enter into the details of the difference between the advantages derivable from the actual poses and their mechanical substitutes. But we might note one or two points in passing.

So far as the action of gravity upon blood circulation is concerned, we get the same advantage in both the cases. We can also put the different checks upon the blood vessels by mechanical means. But the action of muscles that is available in the actual pose is absent in the mechanical substitute and all the physiological advantages arising from muscle tension during the pose are lost in the mechanical substitute. On the other hand the mechanical substitute has peculiar advantages over the pose itself. The muscle action being almost eliminated and the weight being almost entirely thrown upon the wooden board, it is possible to maintain the pose for a considerably longer time with the same amount of energy being expended. In the actual pose of S'īrshāsana the whole body and in Sarvāṅgāsana the same minus the head, are required to be kept standing perpendicular to the ground. Owing to this position, the pressure upon the blood vessels in the head becomes so heavy, that even a stout person can remain in the position only for a very very short time to begin with. If any graduation is to be introduced, it can be introduced only in the duration through which the pose is to be kept up. There can be no graduation in the angle the body makes with the ground in S'īrshāsana or with the head in Sarvāṅgāsana. But in the mechanical substitutes of these poses, angle can be graduated as well as time. So in the case of weaklings and also in the case of the strong where a longer duration is needed, the mechanical substitute has an immence advantage over the original pose. In our therapeutical work, we have been using these contrivances with great success. What is true of S'īrshāsana and Sarvāṅgasana, and their substitutes, is also true of other Āsanas and the mechanical contrivances taking their place.

Next we come to massage and muscle movements promoting blood citculation and giving massage. Here too it is possible to substitute mechanical contrivances. For instance, small soft rollers may be used to be moved across the abdomen to take the place of Nauli. Or vibrators may be used for the self-massage given by Bhastrikā.

Here again it has to be noted that the advantages derived from automatic massage and voluntary muscle movements, can never be replaced by anything mechanical. But as in the previous case the mechanical has the advantage of saving energy, and of more accurate and minute graduation.

Last we come to respiratory exercises. Respiration consists of two actions, inspiration and expiration. It is possible to have some mechanical help to make experations more complete. The easiest way would be to prepare some soap water in a pot. Then to take a small tube with a very narrow bore and blow the soap water into bubbles. The fun will be so interesting that it will induce the lungs to be completely emptied leading to thorough exhalation. This being accomplished the succeeding inhalation is bound to be equally thorough and very deep, the lungs trying to take in as much air as they have been made to send out gases. So the work of oxygenation will be made nearly as thorough as in respiratory exercises.

This or a similar contrivance will save energy only so far as inhalation goes. Exhalation is here as voluntary and active as in respiratory exercises and demands equal amount of energy. So here the saving of energy owing to the use of a mechanical contrivance is very small.

We should like to draw special attention of our readers to one fact. The Yogic exercises of breathing promote oxygenation, indeed. But they are mainly meant to work upon the different centres of the nervous system. No such advantage can be derived from the use of the mechanical help.

Thus we find that it is possible to invent mechanical substitutes for the different Yogic exercises. Although these substitutes can never have the efficacy of the original practices, yet they serve the same purpose on a humbler scale and in a few cases have some advantages over the original. So the answer to the question heading the article is clear and we unhesitatingly declare that we *can* develop Mechano-Yogic Therapy

The Semi-Scientific Section

Following diseases, especially in their chronic condition, can be effectively treated by the Yogic methods:

1 *Constipation.*
2 *Dyspepsia.*
3 *Head-ache.*
4 *Piles.*
5 *Heart-disease.*
6 *Neuralgia.*
7 *Diabetes.*
8 *Hysteria.*
9 *Consumption.*
10 *Obesity.*
11 *Sterility (certain types).*
12 *Impotence.*
13 *Appendicitis, &c.*

Therapeutical advice is given gratis at the Ās'rama to patients coming for consultation.

Arrangements have been made under the supervision of the Ās'rama for patients to stay on payment of actual expenses, Rs. 45 P. M.

THE RATIONALE OF YOGIC POSES

THIS is a complete scheme of Yogic physical culture. Having named the exercises we now proceed to see what an ideal system of physical culture should be, so that we shall be in a position to examine these exercises in the light of our ideal and understand their merits and demerits. During this examination we shall make a special effort to understand the principles underlying the Yogic poses.

One of the aims of an ideal system of physical culture should be to secure the largest percentage of energy resulting from the smallest amout of energy spent in undergoing the exercises. We shall explain at some length what we mean. When we are taking a breathing exercise, we are required to move our respiratory muscles. This movement of muscles requires a particular amount of physical energy to be spent. We spend this energy, because we know that the large quantity of oxygen which we would inhale, would be carried by our blood to the different parts of our body, and would give us far more energy than we spent in our breathing exercise. The same is the case with any other exercise. We spend our energy in swinging our clubs, because we know that the movements are sure to give us far greater energy than the amount we spend.

Thus every exercise is a sort of business. We are required to make an investment with a view to get large profits. Now an ideal business should require the smallest investment, but should ensure the largest profits. Similarly an ideal system of physical culture should require a minimum investment of energy and should result in securing the maximum amount of energy.

Another aim of an ideal system of physical culture should be to effect a maximum increase in the vital index. This again requires explanation. The vital index of an individual is obtained by dividing his lung capacity by his weight. Everyone knows how essential oxygen is to his life. Now this oxygen is made available to the system by the lungs. Hence the vitality of an individual mainly depends upon his lung capacity. The weight of the man represents the bulk of the tissues that his lungs are called upon to vitalize. Thus the vitalizing agent divided by the bulk to be vitalized gives the vital index. Naturally, systems of physical culture can be graded according to the increase they effect in the vital index and the system which is able to show the greatest increase can be put down as the best system.

Another aim of an ideal system of physical culture should be the building up of a healthy nervous system. Of all the systems responsible for the health and activity of the human body, the nervous system is universally acknowledged to be the most important. Naturally, nerve culture should be the most important feature of an ideal system of body-building.

In our own times nerve culture has become perhaps the most imperative thing for every human being. It is the forward march of our civilization and the consequent changes which have come over our life that are making nerve culture extremely urgent. Here we shall consider only a few of these changes.

The most striking change that has dominated our civilized life is the concentration in big cities. The conditions of city life are almost entirely different from the conditions of village life. The din and bustle of the city, the breakneck speed with which the citizens rush to their business, the tediously long hours for which the majority of business men are kept to their desks, the stimulating drinks and food stuffs taken in season and out of season, and above all the unhealthy and inadequate housing accommodations put such a strain upon the human nerves, that nervous diseases are as rapidly developing as the civilization itself !

Again the industrial evolution that has revolutionized our life, brings into play the skill of the operator rather than his strength. Hence in the big factories great strain is put upon the nerve and not upon the muscle.

The modern advance of sciences that has enabled man to annihilate time and space, has shifted the strain from the muscle to the nerve! Facilities of communication have brought distant centres into closer contact; but the worry of travelling in express trains, so also of handling telephone and telegraph, is so great that the nervous mechanism of the city folks is becoming alarmingly sensitive! Constant switching on and switching off of nerve energy under highly unsatisfactory conditions of life, is leading to nervous collapse!

The nerve is more in demand not only in civil but also in military life. In the last war people were found wanting in endurance which is a quality of nerves. The modern war is a war of machines rather than of men. As the manipulation of these machines requires skill, the modern war puts a greater strain upon the nerves than upon the muscles. The post-war development of air-ways and air-force requires nerve energy even on a larger scale than was necessary for the old military life. Though it will take nearly half a century to see what new diseases this recent phase of military life develops, it is amply clear that air-ways and airplanes are putting a tremendous strain upon the human nerves.

Even in civil life, aviation is threatening to displace, at least partially, the sea-borne and rail-borne traffic and will soon be another factor disturbing the nervous mechanism of the civil population.

The few preceding paragraphs will make it amply clear that the present day life requires far more nerve activity than the life that we had a score of years ago. Hence an ideal system of physical culture must make special provision for nerve-building.

Next to nerves or perhaps equal to them in importance, come the endocrine glands. Their supreme worth in maintaining the health of man is beyond dispute. Consequently an ideal system of physical culture must provide exercises taking special care of these ductless glands.

Another aim of an ideal system of physical culture should be to teach exercises that would ensure health for the excretory organs of the body. The bowels, the liver and the kidneys are the principal organs of excretion. They throw out the material that is useless for the nourishment of the body. They are like the drains of a city. If the drains do not work well, filth accumulates and the health of the city is seriously endangered. Similarly if the excretory organs do not work well, the waste material not being properly eliminated, lingers in the body and develops dangerous poisons extremely injurious to the health of man. So an ideal system of physical culture must try to keep the excretory organs in normal health. The same may be said of the digestive system.

Another aim of an ideal system of physical culture should be to take care of the circulatory system. Not only the arteries, veins and capillaries but also the heart and the vasomotor centres must be looked to. The importance of the heart is too clear to require any explanation. The vasomotor centres are responsible for the caliber of the blood vessels. They regulate the flow of the blood throughout the body and are situated in the spinal cord and its upper enlarged part called the *medulla oblongata.* Centres situated in the cord are subsidiary whereas the one situated in the medulla is the principal. When we talk of one centre only, we refer to the centre in the medulla oblongata. If these centres are not kept healthy circulatory system must suffer. The flow of blood is required to be adjusted to the needs of the different parts of our body almost every minute of our life. The activity of the vasomotor centres does not enter our consciousness and is involuntary. Hence we fail to notice the constant adjustment of blood flow that is brought about in our body by the vasomotor centres. Nevertheless this adjustment is of supreme importance. When a man feels giddy on his suddenly standing up, it is because of the defective vasomotor activity, which fails to send the necessary quantity of blood to the brain. Thus it will be seen that the heart and the vasomotor centres deserve careful attention in an ideal system of physical culture.

The last but not the least aim of an ideal system of physical culture should be to develop the muscular system. Well built muscles are necessary not only for giving grace and form to the body, but also for health and strength. In an average adult male human body, the muscles weigh forty-three per cent of the total weight. This will show the enormous importance of muscles in the field of physical culture. But this should not be taken to mean that muscle culture should disproportionately be attended to. What should mark the limit of developing muscles is a question not easy to answer. But in our opinion the answer given in the next paragraph should prove satisfactory in many ways

We have already referred to vital index. This is obtained by dividing lung capacity by the weight of the body. Now this latter factor will mainly be determined by the weight of the muscles which weigh forty-three per cent. The interest of the body lies in getting the greatest vital index. So we can say that in an ideal system of physical culture, the muscles should never be developed to a degree that would decrease the vital index, but should always be built in such a way and in such a proportion to other systems and especially to the respiratory system, that the vital index should always increase.

Thus far we have sketched the most important features that should characterise an ideal system of physical culture. We shall now proceed to see whether these features are present in the system of Yogic physical culture, incidentally introducing comparisons between the Yogic and non-Yogic systems. While doing this we shall also see how far the Yogic poses answer these characteristic features of an ideal system.

A reference to the detailed discussion given on pages 121-124 of this volume, will show that the Yogic exercises require the least expenditure of energy for being practised. True it is that the evidence thus far produced on this point, bears on the Yogic poses only and has no reference to other exercises. But as we proceed we shall publish evidence that has been collected regarding other exercises also. It will all show, to repeat our own statement on P. 121, that the ancient savants of India who developed and formulated the science of Yoga, have so wonderfully economised the expenditure of muscular energy, in every attempt to secure a particular physiological advantage, that they have almost reduced it to the minimum. The physiological advantages sought in physical culture aim at preserving and promoting the health of the different systems working in the body. In the following few paragraphs we are going to show that the Yogic system fully succeeds in this aim. Thus we see that the Yogic system of physical culture is marked by the first characteristic feature of an ideal system.

The next feature refers to the vital index. Breathing exercises play the most important role in the Yogic system of body-building. Thus they tend to increase the capacity of the lungs. The system requires the minimum muscle development consistantly with the healthy growth of an individual. Mathematically written the vital index can be expressed as follows—

$$\frac{\text{Lung Capacity}}{\text{Weight of the Body}} = \text{Vital Index.}$$

Now mathematics tells us that the quotient increases if the numerator increases at a greater ratio than the denominator. In the Yogic system of physical culture we increase the numerator to its maximum and reduce the denominator to its minimum. Naturally, our quotient is bound to be the maximum and we are sure to get the maximum§ vital index. Hence Yoga satisfies the second characteristic feature of an ideal system of physical culture stated above.

We cannot leave this topic without making a reference to the mischief that is being played by particular Western authors. They are publishing, under the name of Yoga, something which is mainly a product of their own imagination. We refer especially to the publications of Yogi Ramacharaka. So far as we can see from his writings, this American gentleman has only, if any, a superficial acquaintance with Yogic literature. As regards direct traditional teaching he looks to have none. An author like Mr. J. P. Muller takes the writings of Yogi Ramacharaka as the authoritative teachings of Yoga and starts condemning Yogic breathing and throwing out challenges on points which have absolutely nothing to do either with Yogic literature or with Yogic tradition! For instance, there is not a single authoritative text book or genuine Yogic tradition that teaches exhalation by mouth. And yet Mr. Muller will criticise thus—

'In most of the Yogi breaths instruction is given to exhale vigorously through the mouth. Sometimes there is even added: "in one great breath through the wide opened mouth."* That this method is wrong, and even in the long run dangerous, I have proved in the foregoing chapters.'†

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§ We have got no experimental evidence to prove this proposition. But the truth of it is so evident that it requires little support from actual experimentation.

* Mr. Muller obviously quotes from P. 129 of Yogi Ramacharaka's *Hatha Yoga*, the original sentence being, "Expel the air vigorously in one great breath, through the wide opened mouth."

† J. P. Muller's *My Breathing System*, P. 48.

This author in continuation of his remarks quoted above says—' The greatest part of the Yogi philosophy consists of words, words, words. But very plausible words, I concede.' This short statement clearly shows that Mr. Muller has not read even a word of any authoritative text on Yoga. Yogic texts are written in such a concise style that scholars have always to complain for their economy of words! Again philosophical side of Yoga is entirely different from the practical side. Hence we find practical Yogins belonging to widely different schools of philosophy.

We could not find in Mr. Muller any reference to the name of Yogi Ramacharaka. And yet the quotation he has extracted and the Yogic (?) terminology he has used, leave little doubt that he has been guided, or better misguided, mainly by the books of the American gentleman. Even some of the Indians are misled by his books. We warn our readers not to fall under the influence of this counterfeit Yogic literature.

It is to be noted here that the Yogic poses by themselves are not capable of increasing the vital index. In the mathematical formula given above they may, at the most, keep the denominator from a disproportionate increase and thus prevent the decrease of the vital index.

The third feature enumerated above is nerve culture. We do not discuss here the relative importance of the central and the sympathetic nervous systems. Even though for the life processes the sympathetic is more responsible than the central. The health of the latter is as essential to the general well-being of man as the health of the former. Hence an ideal system of physical culture must take care of both the systems. Now the central nervous system mainly consists of the brain, the twelve pairs of cranial nerves, the spinal cord and the thirty one pairs of spinal nerves. The sympathetic is represented by two chains of central ganglia placed one on either side of the middle line of the vertebral column. Thus it will be seen that the roots of all the nerves are situated either in the brain and the spine or by the side of the spinal column.

Now it is an admitted fact that nerve culture *mainly* depends upon the care of the *roots* of the nerves. Of course the branching nerves are also to be attended to, but that part occupies only a subordinate position. Yogic physical culture gives exercises principally for the roots of the nerves. It does not, however, neglect their branches. Yoga promotes the health of the nerves by bringing to them a liberal supply of fresh blood and also by automatic massage done either by stretching or by the rapid vibrations of the tissues.

Centuries ago the Yogic savants concentrated their attention upon the head and the spine. It is here that the nerves have their roots. The Yogic poses are calculated to bring a rich supply of blood to the brain and the different parts of the spine. Thus S'īrshāsana supplies the brain, Sarvāngāsana the cervical region and Halāsana the dorsal and lumbar regions of the spine. Padmāsana and Pas'chimatāna supply the lumbar and sacral regions. Mayurāsana supplies the upper lumbar and the lower dorsal sections of the spinal column by mechanically checking the abdominal aorta before it bifurcates in front of the fourth lumbar vertebra. (See Fig. CI).

The Āsanas stretch and bend the spine in different ways and thus give it a sort of massage, promoting the health of the nerves rooted therein. Fig. CII represents Halāsana* and illustrates the anterior bent of the spinal column. Posterior bent is shown in Fig. CIII which gives the pictures of Bhujangāsana, Dhanurāsana and Matsyāsana. Ardha-Matsyendrāsana illustrated in Fig. CIV shows the left twist of the spine. The same Āsana when performed the other way gives the right twist also.

Thus the Āsanas play a very important part in nerve culture so far as the roots are concerned. The branching nerves are only indirectly served.

But there are other important Yogic exercises for nerve culture. They not only serve the roots but also take care of the branches.

(To be continued)

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* A detailed discussion on this pose and others mentioned in this paragraph is yet to appear in the Yoga-Mīmāṅsā.

THE DIGESTIVE APPARATUS

In the list of the accessory organs given at the beginning of this note, two important glands have been mentioned—the *liver* and the *pancreas*. We shall study these structures after we finish with the *small intestine*. At present we wish to notice only the ducts that lead from these glands to the *duodenum*.

The *bile-duct* is about 7 cm. long and of the diameter of a goose-quill. It conducts* the bile to the duodenum and pours the same into it by means of an orifice which is situated some 3 to 4 inches away from the pylorus.

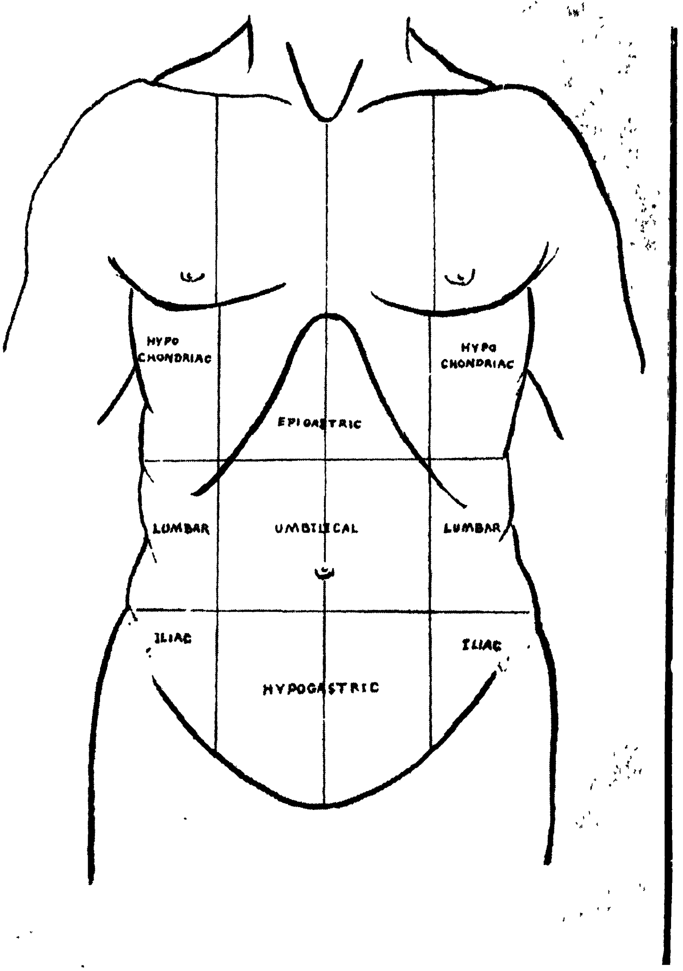
The *pancreatic duct* is formed by the junction of many smaller ducts that carry the pancreatic juice to it from the different parts of the gland. When the duct leaves the pancreas and enters the duodenum it is of the size of an ordinary quill. The pancreatic duct opens into the duodenum by the same orifice through which the bile-duct opens into it.

The portion of the small intestine that lies next to the duodenum is called the *jejunum*. It derives its name from the Latin word *jejunus* meaning empty, because this is usually found empty after death. It has a diameter of 4 cm. and is about 8 ft. in length. The jejunum is thicker, redder and more vascular than the ileum. Here the mucous membrane is thrown into large and thickly situated folds which increase the surface of the small intestine. These are called *valvulæ conniventes*. The jejunum for the most part occupies the umbilical and the iliac regions in the abdomen. (See Fig. CV).

(*To be continued*)

*** The bile-duct itself is fed by two other ducts, the hepatic duct & the systic duct. We shall study these ducts when we study the liver.**

Fig. CV



Nine Regions of the Abdomen.

The Popular Section

N. B.—The Director of the Kaivalyadhāma entreats every man of means to show his active sympathy for the Ās'rama.

N. B.—Instruction in Yogic culture higher as well as lower will be given gratis at the Ās'rama to everyone that earnestly seeks it.

SARVĀṄGĀSANA

or

THE PAN-PHYSICAL POSE

PART III

(*Concluded*)

IN this part of the article we are discussing seminal weakness, and have already examined how Sarvāṅgāsana can help to relieve premature ejaculations and feeble erections.† In this issue we shall close our discussion of this pose by investigating its usefulness in checking involuntary seminal emissions.

We know that there are authors who think that spontaneous emissions, of course upto a particular limit, are as natural for the unmarried youth as menstruation for women. They hold that even the sexually perfect cannot escape these involuntary discharges. We beg to differ from these learned men. Our view is that a perfectly healthy man should have no sexual perturbations such as would end in pollutions. Any serious sexual disturbance should wake him up even from his dreams.* We have not the least hesitation in admitting that such sexual perfection is extremely rare, but this does not mean that it is impossible. *

Speaking of the generality of unmarried men, spontaneous emissions are, so to say, universal. But this circumstance does not necessarily indicate sexual weakness much less a disease. In what follows we shall try to see how people both sexually healthy and unhealthy suffer from wet dreams; and study the possibility of helping these people by means of Sarvāṅgāsana.

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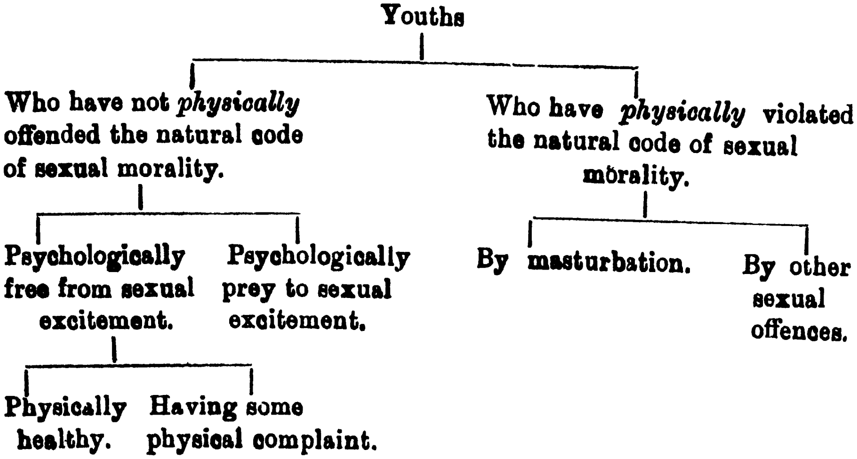
† This discussion has appeared in Vol. II, No. 1. Readers are requested to study carefully not only what has been given there, but also our note on the reproductive organs of man given in Vol. I, No. 4.

* Mere erections due to a spinal reflex may not be able to wake up a man from his sleep, as they do not enter into his consciousness. But the amount of nervous energy required to bring about a seminal emission in the case of a man perfectly healthy in regard to his sexual organs, is so great that it rouses him from his dreams even before the ejaculatory ducts open and thus the emission is checked.

For the convenience of our treatment of the subject we shall divide young men into two classes, namely, those that have not *physically* offended the natural code of sexual morality and those that have violated this code either by self-abuse or by excesses, legitimate or otherwise. The youths of the first class may again be divided into two subordinate classes, namely, those that are psychologically free from sexual passion and those that are visited by sexual perturbations. Again the first subordinate division of the first class may be further classified into two categories: those that are physically healthy and those that have some physical complaints especially about the digestive system. We show this classification in a tabular form.


Youths
Who have not *physically* offended the natural code of sexual morality.
Who have *physically* violated the natural code of sexual morality.
Psychologically free from sexual excitement.
Psychologically prey to sexual excitement.
By masturbation.
By other sexual offences.
Physically healthy.
Having some physical complaint.

First we take into consideration youths who have not physically offended the natural code of sexual morality and who are psychologically free from sexual excitement and are physically healthy. Except in very rare cases even these people suffer from spontaneous emissions. But it is only once or twice a month and the incident does not bring on any exhaustion. Very often it gives a refreshing tone to the mind and body. A youth may have these wet dreams for years without any way damaging himself materially. There are cases on record where highly educated university men continued to get these pollutions for a long period till they got themselves married. During all these days they maintained normal health both of body and mind and afterwards found themselves quite competent and happy in the discharge of their marital responsibilities.

Here the question arises as to whether these involuntary discharges of the youths can be checked considerably, if not completely. If we study the physiology of these emissions, we think we can see that their frequency can be successfully reduced by particular Yogic exercises. * As is explained in the note† on the reproductive organs of man, the semen is produced in the testes and is stored up in the seminal sacks called *vesicula seminalis.* A part of this seminal fluid is again absorbed into the system. When the quantity of the semen left after reabsorption is too big for the sacks to contain, it overflows in the form of spontaneous emissions generally accompanied by dreams involving some sexual experience. Now if the power of absorption can be so increased as to keep pace with the power of production, the quantity of semen required to be stocked in the sacks would never be unduly heavy and would never stand in need of being discharged. It is extremely difficult to accomplish this feat, but not impossible.§ It is not so difficult, however, to increase the ordinary power of absorption and enable it to make a nearer approach to the power of production. A successful practice of Uddiyāna and Nauli* carried over a reasonable period of time, helps a youth to reduce the difference between the reabsorption and production of the seminal fluid. The greater the power of reabsorption the lesser will be the frequency of discharges.

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* As the article is dealing with Sarvāngāsana which has little control over the type of emissions under discussion in this and the preceding paragraphs, we shall make only a passing reference to the other Yogic exercises without entering into details. We do mean to discuss this subject at length somewhere else in this journal.

† Vide Vol. I, pp. 278-280.

§ This ideal condition of having the seminal production and reabsorption perfectly balanced can be reached only after *the full awakening of the Kundalini.*

Sexual energy is the very fountain head of purity, health and enterprise. Everyone of us should, therefore, try to conserve it as best as he can.

Speaking from the point of view of the generality of people, we have no hesitation in saying that a youth experiencing seminal discharges once or twice a month without feeling any subsequent weakness can go his way unconcerned. He does not stand in any danger. He should mind his business as if nothing is happening to him.

Unluckily for us, however, in many cases the youth does not continue long to be indifferent to his experiences. Even from the beginning of the age of puberty, if not earlier, owing to the strange sensations that characterise these years, the attention of the boy is directed towards his reproductive system. Even before he experiences the first spontaneous emission, his sexual organs play an important part in his imagination. As the wet dreams multiply he begins to get more and more anxious about his normality. Everyone knows, howsoever dimly, that his future happiness depends upon the soundness of his reproductive system. Hence these new disturbances raise his suspicions and add to his anxiety. Generally the boy in his alarm tries to consult an elderly comrade of his; and more often than not, there his misfortune begins! Almost in every case the consultation consists of comparisons regarding the form, size or function or all these of the sexual organs. The elderly lad, in his ignorance of the consequences, generally exaggerates matters, and alas the younger one is frightened out of his wits! A sense of unworthiness begins to haunt him and makes him miserable out of all proportions. Some one directs him to the sensational literature that is so freely circulated by the so called sexual experts. This confirms the worst of his fears which continue to torment him darkening his days till he really grows sexually weak, or is disillusioned by experience or real expert advise. We quote from Dr. Hall's *Adolescence* a case where imaginary fears rendered a healthy youth so miserable. It is that of a doctor of philosophy, prominent in his profession and a father of several healthful children. The doctor says:—

"The one greatest fear of all my boyhood was connected with my sexual organs; the big boys would expose us little ones, and said mine were too small. I began to brood over this, age eight; felt disgrace, and haunted with forebodings; one day there seemed a very slight inflammation, age twelve; I thought I had done a nameless sin, and prayed God to let me get well, which I soon did, but a morbid association between it and a hen's neck long persisted; I read literature on lost manhood, self-abuse, etc.; fancied I had all the diseases, and had committed the unpardonable sin; the first spontaneous emission nearly paralyzed me, but although I found myself still alive, felt that my days were numbered; I corresponded with a quack, and later began to study my urine with great alarm, and found plenty of marks of disease; there, were reddish and whitish settlings, lack of colour and overcolour, strong smell and no smell, it was too clear, too thick, too copious, too scanty, or, worst of all, had an iridescent scum; when fourteen I gradually settled to the fact that I was sexually abnormal, might possibly live seven years, till twenty-one, and then find what I had heard was a sure cure in marriage; I found encouragement from quack advertisements, which said the wretched beings sometimes held out for years; I lived on, and people said I was in robust health, but it was years before I realized that I was perfectly normal; Bible passages greatly aggravated my fears, as I look back, my entire youth from six to eighteen was made miserable from lack of knowledge that any one who knew anything of the nature of puberty might have given; this long sense of defect, dread of operations, shame and worry has left an indelible mark."

These imaginary fears are so terrible that they may actually end in impotency. Marro quotes such a case. Extreme melancholy due to the undeveloped condition of one testicle resulted in psychic impotence in one man. A clever surgeon undertook to operate the patient and during the operation inserted a silver testicle which the fellow took to be normal and was completely cured. *

A case from upper India was reported§ to us a few days ago. It shows how weak a man proves before these imaginary fears. Even the proof of his personal experiences is not able to save him !

A young man lived happily with his wife and was blessed with two issues He never dreamt that there was anything abnormal about him. Life was all joy and pleasure ! But incidently he came to know that man has two testicles whereas he had only one!† Immediately he fell into the conviction that he was sexually defective and refused to be disillusioned ! We are told he is finding his life simply untenable !

These are extreme cases no doubt. But they clearly show how false alarms can lead to untold misery. By our own experience we know that there are many youths in the society who look to be quite normal outwardly, but inwardly are greatly miserable for these baseless fears. The result is that their attention is repeatedly diverted to their sexual organs As explained in Vol. II. No 1 this leads to the conjestion of blood in these parts impairing their strength and making the youth more liable to spontaneous

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* Here it is to be noted that perfect manhood is possible even with one testicle

§ Unluckily we have lost all trace of this case since then. We shall feel highly obliged if the same is brought to our notice again. The name will ever remain strictly confidential.

† At an early period of fœtal life, the testes are placed in the posterior parts of the abdominal cavity in every case. It is only by the end of the eighth month that they reach the scrotum which they continue to occupy throughout life. Naturally the scrotum is looked upon to be the only legitimate place for these glands. Sometimes, however, the testes are retained within the abdomen. This circumstance by itself produces no defect in sexual function and should lead to no alarm. The case under discussion seems to be one of undescended testes.

emissions. So also the constant thinking of sexual matters keeps the mind so much occupied with these thoughts, that dreams bearing on this subject become more frequent and consequently multiply night pollutions. The process goes on gathering strength. There is some pleasure even in these dreams especially when the experience is new. The nerves get into the habit of seeking this pleasure unconsciously and the involuntary discharges become more and more frequent Thus a youth who should have continued to be quite normal and certainly would have done so had he been indifferent to his occasional emissions, becomes a victim of wet dreams simply for his groundless alarms !

Our advice to this class of youths is first to get rid of these false worries. They should think as little of their reproductive organs as possible. The freer the mind from all morbid associations and thoughts, the greater will be the relief. Then in order to get free from the conjestion in the sexual parts and especially in the ejaculatory ducts, they should practise Sarvāngāsana according to their strength and vitality. For just as in the case of premature ejaculations so in involuntary discharges, it is the ejaculatory ducts that are more responsible for the abnormality than any other part of the sexual organs.

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Now we take notice of the second category of youths. They are also such as have not physically offended the natural code of sexual morality, and are psychologically free from sexual excitement. But they differ from the previous class in as much as they have some physical complaints, especially of the digestive organs. This class is far larger than the preceding one. We shall now study the causes of their suffering, and see whether Yogic exercises, especially the Pan-Physical Pose can help them.

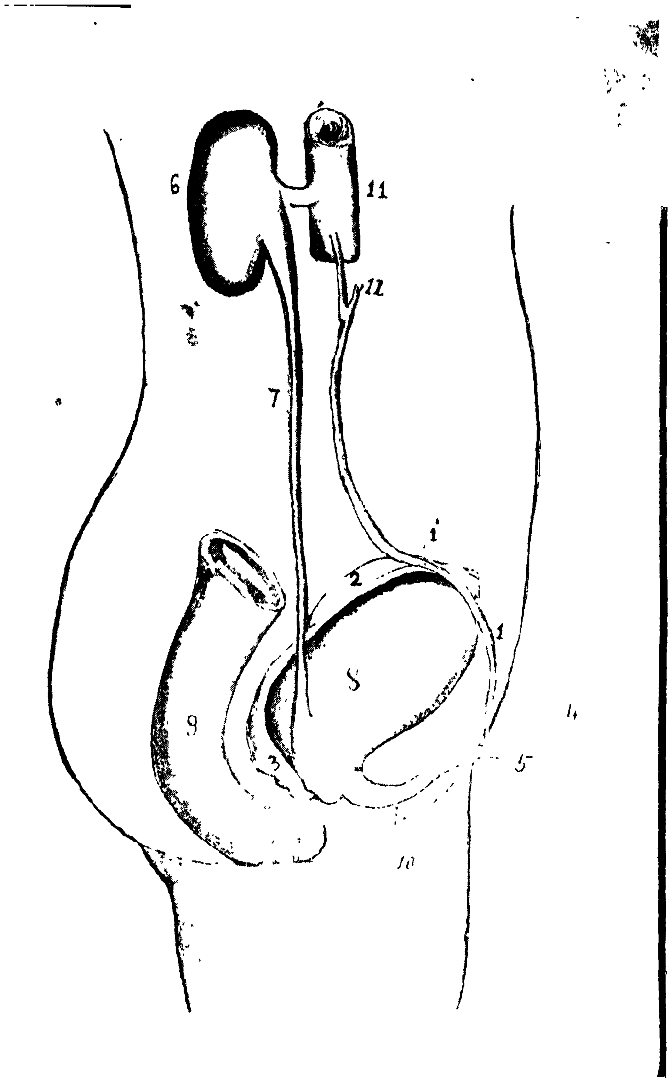
In order to understand clearly the case of these youths, it is necessary to recall certain physiological and anatomical facts from the preceding issues of this journal. We shall, therefore, first refresh our memory regarding these facts and then proceed to discuss the present problem.

The first fact is concerning the situation of the seminal sacks. A reference to Fig. CVI will show that the vesicula seminalis lie between the rectum and the bladder. It is in these vessels that semen is stored up and continues to remain there till it is either reabsorbed or discharged. These vesicula seminalis have ample space in the abdomen to occupy, when both the rectum and the bladder are empty, But if either of them is full these sacks have to experience a little pressure which is considerably increased when both of them are loaded. Similarly the vesicula seminalis are largely pressed when the bowels are distended owing to the accumulation of gases

The second fact refers to the suppression of the call of nature and the consequent degeneration of the nervous mechanism of the rectum and the pelvic loop. We might quote here with advantage a passage from Vol I.

The call of nature comes only when some of the fæces are introduced into the rectum by the downward contraction of the colon. But if the call is not answered and the bowels are not permitted to move, the fecal matter has to lie in the rectum and cannot go back, the rectum having no antiperistaltic action for the backward movement of its contents. The process of absorption that is ever going on through the walls of the colon and the rectum, whenever they are full, removes water from the fæces thus detained in the rectum, and renders them harder and harder every hour. These hardened masses of fecal contents go on mechanically stimulating the rectal nerves, till at last they are completely exhausted and refuse to set up any reflex action which, as we have already observed, leads to defecation. If in this way one is required to suppress the call day after day, the rectal nerves become so much degenerated that no call is felt, even when matter is forced into the rectum; and con-

Fig. CVI



The Reproductive System of Man.

1 The Spermatic Cord.
1' The point where the Vas Deferens separates from the Cord.
2 The Vas Deferens.
3 The Vesicula Siminalis.
4 The Urethra.
5 The Penis.
6 The Kidney.

7 The Ureter.
8 The Bladder.
9 The Rectum.
10 The point where the Ejaculatory Duct joins the Urethra.
11 The Abdominal Aorta.
12 The Permatic Vein.

stipation is the result! The pelvic loop acts as a reservoir of the fæces before they are discharged. But when there is no evacuation, these loathsome deposits accumulate, and so distend the loop that it becomes almost crippled.

The third fact that deserves our attention in connection with this topic, although it has not been previously mentioned in this journal, is the dreamy condition induced by the loaded bowels. We do not enter here into the genesis of dreams, we simply note that the digestive disturbances are mostly associated with dreams

Having studied these facts we are in a position to see how the second class of youths suffers from pollutions which generally occur in the latter part of the night. In the case of youths that have lost their rectal reflex, the rectum is generally loaded with fæces. The matter remains there causing uneasiness for hours together. Now even if the youth retires with an empty bladder, after four or five hours of sleep it becomes full again. Thus in the latter part of the night both the rectum and the bladder are greatly distended and press upon the vesicula seminalis that are situated between them. This pressure leads to sexual excitement. The loaded rectum is already inducing dreams which readily get a sexual factor introduced into them owing to the sexual stimulus, and the whole affair ends in a seminal discharge. At times the loaded rectum alone or the distended bladder alone is capable of bringing about a discharge. But generally speaking it is the co-operation of the two that is responsible for the emission. If the youth is lying supine in his sleep, the pressure of the bladder is more acutely felt on the seminal sacks. In addition to this, if he has some predisposing cause to induce dreams, such as placing the hands on the chest etc., he cannot possibly escape a discharge.

The pelvic loop, if it is heavily burdened, has a similar effect. The colon with accumulated fæcal matter leads, though to a lesser extent, to the same result. Dyspeptic people often suffer from foul gases distending their bowels and thus creating enormous abdominal pressure This also leads to seminal trouble, as the loaded bowels A heavy meal acts much in the same fashion.

Now to start with these youths have a normal sexual apparatus. The real trouble lies with their digestive system. But here as well as in the case of the first type of youths, ignorance plays havoc. Nay, owing to the adventitious causes discussed so far, this class of young men gets a larger number of discharges in a month than the youths of the previous type, and this circumstance adds to the imaginary fears that are already at work. Incidental and regularly instituted comparisons with fellow students, oral and written inquiries with the so called experts, the sensational reading of quack literature, the indiscriminate and greedy swallowing of the dangerous specifics follow in the wake of one another and make their lives awfully miserable ! Misgivings about their manly powers begin to haunt them day and night. The whole attention being given to the genitals, these begin to suffer from the conjestion of blood which impairs their vitality. This in its turn leads to more frequent emissions and soon a vicious circle is thoroughly established from which there is no getting out !

If these people understand matters rightly they should get rid of the indirect causes leading to discharges, even before the reproductive system begins to show signs of real weakness. They must immediately address themselves to fighting out constipation, dyspepsia etc. Yogic exercises will be found always useful for this purpose In our article on cecal constipation we have discussed these exercises at great length as remedies against constipation in general, and do not wish to elaborate the points here again. The same exercises will also be found efficacious in dyspepsia and many other digestive troubles

The Pan-Physical Pose is also useful in cases of constipation and dyspepsia. Especially in constipation, patients suffer from what is called, downward displacement of the abdominal viscera or *visceroptosis*.

In Vol. I of this journal, our readers will find an exhaustive discussion of this aspect of constipation and its treatment. There the Head Pose has been declared to be the best remedy in this connection. Sarvāngāsana will be found equally effective.

There is another reason why Sarvāngāsana helps to cure constipation or dyspepsia. In these diseases, there is generally congestion of blood present in the abdominal organs. The Pan-Physical Pose, owing to the force of gravity, drains these congested organs and secures for them a fresh blood supply, which tones them up to better health.

Youths of this class should not, however, wait till the whole digestive apparatus is set right. In the mean while, they can use temporary measures, and try to see that their rectum is not loaded in the latter part of the night. This can be accomplished by adjusting the calls of nature to the morning or day time. Dropping the evening meal or even a slight fast of a day or two occasionally, might be found useful for this purpose. Enema taken at bed-time will also bring about the desired result. Young people of this class should never retire with a loaded rectum or resume their sleep in that condition. The bladder also must be emptied and the supine posture in sleep avoided. The practice of Sarvāngāsana before going to bed coupled with dropping the evening meal, will be found very useful to avoid a loaded rectum at awkward hours.

If through ignorance, these youths neglect themselves so as to develop sexual weakness, they should still get relief from the Yogic exercises and especially from Sarvāngāsana for reasons already noted. They must, however, first get rid of their false alarms, stop taking dangerous specifics and cease brooding over their genitals night and day.

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Next we take into consideration that class of young men who have not physically offended the natural code of sexual morality, but who are mentally a prey to sexual excitement. This class, generally comes of respectable and pious families, and is brought up under healthy home influence. As these youngsters grow up, however, they are given a sort of latitude in their conduct which they abuse by reading erotic literature, by visiting theatres and cinema houses witnessing love dramas and love films, and by feeding freely upon stimulating drinks and irritating food stuffs. Their tender mind is easily impressed with what they read, hear and see, and begins to experience strange perturbations which are further developed by stimulants and irritants so liberally used. They start brooding over sexual matters, not in relation to what they have read, heard or seen, but in relation to themselves. The healthy habits which they had already formed, keep them from falling into the deadly practice of self-abuse or homosexuality.* But they can hardly prevent their mind every now and then breaking loose from their control and wandering away to sexual allurements. Luckily for them only the opposite sex continues to absorb their attention. But their sexual disturbances, which in course of time develop into regular storms, begin to spend their fury upon these young folks as at this stage they are unmarried and have no responsive partner. Violent passions roused by matters sexual, stimulate the genitals and promote the manufacture of semen. The power of absorption, however, continues to be the same, even if it is not impaired. The result is that larger quantities of the fluid come to be stocked up in the seminal sacks which begin to overflow repeatedly. Mind subjected to erotic uneasiness leads to congestion in the reproductive system as has been already explained, and adds to the evil of discharges. The increased frequency of emissions tells upon their health. The power of resistance is on the wane, and very soon these youths fall a prey to different diseases !

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* Sexual attraction between persons of the same sex.

Body is always easier to control than mind. In the case of the first two types of youths, the body is mainly responsible for their suffering at least in the beginning and the mind is involved afterwards. In the case of this third type, the mind is chiefly responsible for their ailment, and the body is affected afterwards. Hence the first two classes of young men find it easier to regain health than the category at present under discussion. Even the physical exercises in Yoga will singularly fail to help these people, if they do not sincerely and penitently try to purify their mind. * They must tear themselves off from their debasing associations, uproot sexual ideas from their thoughts, cultivate healthy friendships, and pass their sleepless hours in prayers ! With a relegiously watchful mind, they must shut out all matters even indirectly exciting lustful thoughts ! Then by slow degrees the mind will become purer and the physical disease will be controlled.

The sufferer need not wait till the disorder is fully controlled by mental discipline exclusively. As soon as he finds that the mind has begun to respond to the purer side of his thoughts, he might begin his curative exercises. Nauli, Uḍḍiyāna and Sarvāṅgasana will be the best exercises for him, as these will regenerate his sexual apparatus, by promoting absorption and relieving congestion in the reproductive organs.

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Now we take into account the fourth type of sexual sufferers, the victims of masturbation.

We need not try to trace the origin of this fell vice either in the societies in general or in individual cases. It is almost instinctive ! Not only human beings, but even mon-

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• Yogic discipline enjoins very strict rules for mental purification and suggests methods of peculiar efficacy. But as we are discussing only the physical side of Yoga, we have to admit the inadequacy of these exercises in helping these sufferers, *if they do not try to improve their mind.*

keys, dogs, stallions, elephants etc. are authentically reported to be prone to this perversion ! There is no age when we can declare this vice to be physically impossible. Even the infants in arms are initiated into it, the nurses teaching it to them to keep them from weeping ! Under these circumstances, we need not wonder, if an overwhelming majority of our race had been some day or other under the grip of masturbation On the strength of a very good authority we know that in U. S. A. millions of letters are sold in the market, letters written to advertising medical companies and doctors, by youths that have wrecked their health owing to this dangerous habit. In India things are not far otherwise. Every one that comes forth to say something on matters sexual, is pestered with letters written by these unfortunate victims of masturbation, with their heart's blood we may say.

Terrible is the revenge that Nature takes on these youths for offending her code of morality ! Dr. Hall sums up in a paragraph the extent of misery resulting from self-abuse and quotes some select cases observed by Dr. Seerley. We reproduce the same here for the information of our readers.

" One typical youth of good heredity and otherwise normal decided that he would not go to college, was ruined, and must soon inevitably become insane. Another bought a revolver and planned, after a farewell visit to his mother in a distant town, to shoot himself in despair. Another selected a spot at the river where he would drown himself, which he prepared to do, but almost by accident met a physician who persuaded him after two hours that he was alright, when he went to work with renewed courage, and now seems entering upon a promising career. Another young man selected a cord, which he carried in his pocket for a long time, trying to muster courage to hang himself, because he could only disgrace his friends and his parents, who had made so many sacrifices for him. Another gave up a promising career and shipped on a long voyage, hoping to find this a cure. Another turned on the gas at night, but was discovered and saved in time."

Of all the sexual sins masturbation is perhaps the worst and most destructive of manly powers. Excitement necessary for producing an orgasm in this habit, is far greater than the excitement required for the same purpose in a natural intercourse. Hence heavy masturbation taxes the system far more seriously than sexual excesses. The result is that as soon as the habit is well established, the sexual apparatus begins to degenerate and the victim soon starts losing his manhood. Spontaneous emissions multiply owing to the lack of tone in the genitals, and voluntary and involuntary pollutions soon reduce the youth to be a physical wreck! Degenerated testes manufacture less and less semen untill at last they cease to secrete any. Shadows of death darken the whole frame and complete impotency is the result. The very life that should have been all joy and happiness, becomes a veritable hell-fire !

Will grows weaker than the body. Excepting perhaps, the earliest days of this devitalising habit, a sense of unworthiness, sin and pollution begins to torment the victim. Repeatedly he is determined to free himself from the perversion. Very often he seems to have even succeeded for a time. But the vice returns with vengeance only to get a firmer grip on its unfortunate prey ! Will power grows weaker and weaker with every defeat, till at last it finds itself too feeble to carry on the struggle !

Is there no getting out of this deadly vice ? In ninety-nine cases out of a hundred there is, provided the problem is tackled in the right way. So long as the victim has not lost his will power, avoiding all privacy, placing himself in healthy and pure surroundings, abhoring all predisposing influences, will help the soul. But when the will power is considerably weakened and does not help the sufferer in sticking to his decisions, there is only one way out of the difficulty. The erring youth should confess his sins to an elderly gentleman of unquestionable morals and place himself entirely under his charge. The gentleman must be such as has studied the ways in which these misguided criminals can be helped and must be willing to undertake the responsibility of correcting them. This arrangement * invariably succeeds except in one per cent of cases where the mercy of the Lord alone can be of some use !

The habit discontinued, the remaining task is comparatively easy. The Pan-Physical Pose is a wonderful exercise for making up the ravages of masturbation. It surprisingly helps regeneration of the testes and the thyroid which greatly suffer on account of this vice.† At least in two cases we have seen the testes resuming their secretions in about a month's time devoted to this practice. Nauli and Uḍḍiyāna should be practised for promoting reabsorption and strengthening the sexual apparatus. It always take time to rejuvinate oneself tolerably well. The spontaneous discharges continue to harass for years. But after all much of the lost manhood is regained and life becomes tolerably if not entirely happy.

Throughout in this part of the article, it is to be noted that along with the specific exercises prescribed, general Yogic or non-Yogic exercises as may be indicated by the particular condition of the sufferer, will be of great value in helping him to health.

Just a word more for the masturbating lads, not to encourage them in their sin, but to put them on their guard. The effects of masturbation are almost always exaggerated. The quack literature is full of overdrawn pictures. So the best way would be not to be unduly alarmed at the past

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* The real difficulty in this remedy is the extreme paucity of elders of the desired qualifications and the dangerously secretive tendency of the sinners themselves !

† Vide first part of the article, pp. 69-75, Vol. I.

V

Varicose vein, I 294
Vasomotor centre, I 276; II 122
Vasomotor centres, II 262
Vrikshāsana, (See under Āsanas)

Y

Yoga-Mudrā (See under Mudrās)
Yogic flushing of the colon, (See Basti under Kriyās)
— therapy, fundamental principles of, II 249
Yogic therapy, mechano-Yogic therapy, substitute of, II 248
— — principal characteristics of practices in, II 251

Miscellaneous

KAIVALYADHĀMA

AN APPEAL

The institution Kaivalyadhāma was started in October 1924 at Lonavla with the object of carrying on active scientific research in the field of psycho-physiology, spiritual and physical cultures etc., with their application to therapeutics. For this purpose the Yogic science of ancient Aryans was singled out, as the same teaches exercises covering the different fields into which research was to be carried. The latest laboratory methods according to the strict scientific standard of the West are being followed in the work of the institution. Up to now the X-Ray has been very largely availed of.

The theoretical research work of the Kaivalyadhāma, as far as it has reached to-day, leads to the following conclusions: the Yogic system of physical culture compares very favourably with others obtaining in the field, as it has none of the disadvantages which the others have. Its aim is to secure greatest longevity with highest physical efficiency and maximum brain power. It is peculiarly fitted for the females. Yoga as a system of preventive exercises is simply marvellous, as it keeps the whole nervous and glandular mechanism in the healthiest condition. Even as a system of therapeutics, Yoga stands above all the other types of Naturopathy. It is peculiarly capable of curing chronic diseases. Against constipation, dyspepsia, hysteria, piles, head-ache, heart-disease, (functional), neuralgia, obesity, diabetes, consumption and a number of other dangerous diseases, of course barring their advanced stages, its work is simply surprising. Impotence in young men can be largely cured and certain types of sterility, especially in women, can be easily removed. No system of treatment can boast of being even equal to the Yogic in making up for the ravages of masturbation. Mental disorders can best be set right by Yogic Therapeutics. The undersigned feels confident that the results in the field of psycho-physiology and spiritual culture will be equally encouraging.

These researches, the original scientific evidence with its interpretations, are being published in a journal called the Yoga-Mīmānsā. Up to now eight issues have been published. The journal is appreciated not only throughout India but also in foreign countries, as will be made clear from the different appreciations extracted at the end of these pages. The physical culture and therapeutical sides are especially appreciated by eminent medical men both in the East and the West. The Director begs to draw the readers' attention especially to the opinions of Dr. Rissom, professor of physical culture, Heidelberg University, Germany; Dr. Clare, M. D., Carlton Minn, U. S. A.; Dr. Caldwell of

'The Caldwell Health Home', Calif., U. S. A.; Dr. A. C. Bisharad, M. R. A. S., (London), Calcutta; Prof. Manikrao, Baroda and Dr. Gananath Sen, M. A., L. M. S., Calcutta. The view of Mr. Mead, Editor of 'The Quest', London, is typical of the press notices. Dr. Sanjivi's opinion shows how the work is finding favour with France. The Hon'ble Sir C. V. Mehta's letter indicates the appreciation of a high Government official.

Very valuable periodical literature is being exchanged with the journal. The Royal Sanitary Institute, London; The Quest Society, London; The Open Court Publishing Company, Chicago, (U. S. A.); The Eastern Buddhist Society, Kyoto, (Japan); Indian Psychological Association, Calcutta; The Madras University, Madras; The Theosophical Society, Adyar, (Madras); The Mythic Society, Bangalore; Andhra Historical Research Society, Rajahmundry; The Royal Asiatic Society, Bombay; The Bhandarkar Oriental Research Institute, Poona; Govt. of India Archæological Dept., Simla; Nizam's Archæological Dept., Hyderabad, (Deccan), are all exchanging their periodical publications with the Ās'rama.

Out of the very vast periodical literature received in the institution, a *Free Reading Room* is maintained for the benefit of the general public.

But the activities of the Kaivalyadhāma are not restricted merely to the laboratory and academic interpretations. It is doing curative work according to its researches on a large scale. During the three years of its existence, it has given therapeutical advice *free of charge* to nearly a thousand patients coming from all parts of India. A regular health-home has been started having accommodation for nine beds. Indoor treatment is being given *gratis*, the patient being made to pay *only* for his boarding and lodging.

A well equipped clinical laboratory is organised under a competent medical graduate and gives all medical examinations *free of charge*. H. H. The Maharaja Ranasaheb of Porbandar has been kind enough to allow it to be associated with his royal name which bespeaks of the deep interest he is taking in the work of the Ās'rama. The laboratory is thrown open to the general public. Arrangements are made not only for all sorts of microscopic, chemical and physical tests, but also for ophthalmic examinations. The equipment is so complete that this is the only clinical laboratory of its type between Poona and Bombay. Medical institutions including the big railway medical establishment and the Karla Sanatorium are taking advantage of this laboratory. Along with these pages are produced copies of letters received from the heads of some of these institutions.

A physical and chemical laboratory for research is fitted up in the Ās'rama under an M. Sc. and an M. B. B. S.

A number of youths are being maintained by the institution for being trained in Yoga in all its aspects- spiritual, physical and therapeutical. After their training is completed they will spread themselves to different parts of the country to serve humanity with a spirit of self-sacrifice. Some of these students are already graduates of recognised universities.

Thus it will be seen that the Kaivalyadhāma is not only a research institute, but is doing active public service in a religious spirit. The level of its work is very high as must have been made clear from the foregoing paragraphs.

The Kaivalyadhāma is a public institution and is being maintained from public charities. A list printed at the end of this appeal gives some of the principal donations received up to now and the annual grants that are being given to it. Though these amounts are very small, they indicate the general sympathy that the institution is receiving from responsible persons. Shreemant Pratapsheth of Amalner deserves our best thanks for his liberal donation of Rs. 5000. Had it not been for this donation, the Ās'rama could never have started its work so well. The Porbandar grant of Rs. 3000 per year has placed the Director under a deep debt of gratitude to H. H. The Maharaja Ranasaheb and has given a great impetus to the work of the institute. Our obligations are also due to Raja Pratapgirji of Bombay and others for their active sympathy for the Ās'rama.

In addition to the monetary help thus received, Sir Prabhashankara Pattani of Bhavnagar has been kind enough to lend the Ās'rama free of charge the use of his beautiful estate on the Bombay Poona Road worth about Rs. 20000. Dr. Nair, proprietor of the big firm of N. Powell & Co., Bombay, has allowed the institution to work his X-Ray installation gratis, throughout the year for experimental purposes. Mr. G. R. Chitale, a local High Court Pleader, has offered a plot of 56 Acres for grazing the cattle of the Ās'rama on a lease of 99 years free of charge. The Ās'rama is greatly indebted to these gentlemen as well as to many others who have been equally sympathetic to the Ās'rama, but whose charities could not be referred to here for want of space.

The Director is a recluse having no economic interest in the property of the Kaivalyadhāma. The institution is entirely public and belongs to no person in his individual capacity. It is maintained on the sacrifice of its workers and the public donations and grants.

The activities of the Kaivalyadhāma, as they are carried on now, are on a humble scale naturally for want of the necessary economic support. A College of Spiritual Culture where along with Yoga, eastern and western philosophy, Comparative Religion and other subjects would be taught; and where for the postgraduate work, research in different branches of ancient culture would be organised, is urgently needed. So also a College of Physical Culture training students to look to the advancement of the Indian physical well-being, is contemplated to start as early as possible. For clinical work in Yogic Therapeutics, large health resorts are necessary. Looking to the needs of the Ās'rama, the present laboratories require to be largely augmented. At present the Ās'rama is conducting its work in hired buildings which prevent any permanent improvements needed for its activities. The Publication Department which can be made a source of income requires huge outlay in the beginning. At a moderate calculation some ten lacs of rupees are required to put the whole scheme on a respectable basis.

Yogic culture is one of the richest legacies the ancient Indian savants have left to the world. The noble spiritual elevation that is seen in India even in her present deplorable condition, is mainly due to the influence of Yoga in one form or another. A revival of this culture is sure to raise her to her former position of glorious dignity. The Ās'rama is trying to bring Yoga in co-relation with the present day culture by attempting a scientific interpretation of its truths. It undertakes to train youths who will stand for whatever is best in the different cultures of the earth, ancient or modern. Under these circumstances, the Director humbly begs to suggest that it is the duty of every individual who cares for the progress and well-being of humanity, to show his active sympathy to the Ās'rama and enable its workers to realise its noble ideals.

Kun'javana,
Lonavla,
1st November, 1927.

Kuvalayānanda,
DIRECTOR, KAIVALYADHĀMA.

SOME PERSONAL APPRECIATIONS & PRESS NOTICES

OF

THE YOGA-MĪMĀṄSĀ

DR. RISSOM, PROFESSOR OF PHYSICAL CULTURE,
HEIDELBERG UNIVERSITY, GERMANY.

" You have shown a friendly feeling in sending us the first issue of the periodical Yoga-Mimansa published by you. It has interested us very much as gymnastical exercises similar to those illustrated in your excellent photographs are now also practised by us more than before. "

DR. L. N. CLARE, M. D., CARLTON MINN., AMERICA.

" I received and read the October number which was interesting and instructive. "

MR. G. R. S. MEAD, EDITOR, 'THE QUEST,' LONDON.

" I have only had time just to glance at it, but am already convinced that it will be of great service to serious students of Yoga in the West. "

DR. CALDWELL, 'THE CALDWELL HEALTH HOME', CALIF., AMERICA.

" We are in receipt of a copy of your magazine Yoga-Mimansa, and read with much interest. The breathing exercises and poses appeal to us, and we will try them out in our work. You have given evidently deep and careful study to the effects of the movements and your researches are interesting. "

DR. A. C. BISHARAD, M. R. A. S., (LONDON), CALCUTTA.

" Your excellent journal is a new venture of its kind and I have read it with interest. "

DR. GANANATH SEN, M. A., L. M. S., CALCUTTA.

" I have gone through the book carefully and have found the researches very interesting. " .

PROF. MANIKRAO, JUMMADADA VYAYAMA MANDIRA, BARODA.

" Your attempt to explain Yogic physical culture in the light of modern sciences has my heart-felt sympathy."

DR. SANJIVI, M. A., PH. D., LITT. D.,
PRESIDENT, 'THE LATENT LIGHT CULTURE,' TINNEVELLY, S. INDIA.

" You are doing very useful work and the journal has found a great support in France. My agents in France speak very highly of the work and a strenuous effort will establish a branch of the Ashrama in Paris if a proper representative can be sent by you."

THE QUEST, THE QUEST, SOCIETY, LONDON.

" During the last few years a gallant attempt has been made, under the supervision of Swami Kuvalayananda, to carry out a systematic and practical study of Hatha-Yoga, by applying to it Western methods of observation, with a view to demonstrating its *raison d'être* and its high therapeutic value. The results of these studies by Indian practitioners have been appearing in his very valuable periodical called *Yoga-Mimansa.*"

THE MODERN REVIEW, CALCUTTA.

" Physical culturists, medical men, experimental psychologists and those who are classed as general readers should find the periodical interesting and instructive. "

CURRENT THOUGHT, MADRAS.

" The issue before us is a very valuable and interesting production and fully justifies the unique place and the importance of the journal in the realm of modern scientific and philosophical literature...... The printing and get-up of the journal is fine, as befitting a scientific journal recording great truths. "

UNITED INDIA & INDIAN STATES, DELHI.

" From its general appearance and get-up of the journal and the matter it contains one can see that the work is in able hands and in time the institution will be as useful and popular as the New York Institute of Science. "

THE JOURNAL OF AYURVEDA, CALCUTTA.

" The object of this journal, which is full of novel and interesting subject matter from the beginning to the end, is to record scientific researches in psychology, spiritual and physical cultures, etc. with their practical application to therapeutics. We are quite proud to emphasise the fact that the Swamiji has fully succeeded in his mission. The magazine is for everybody...... The various poses and practices of Hatha-Yoga with their utility in curing different diseases have been well described and illustrated with excellently done-up half-tone photographs. "

THE KESARI, POONA.

" Yogic culture is looked upon as something mysterious and secret. This endeavour to bring it before the popular gaze and to interpret it in the light of modern sciences is altogether unprecedented in this country."

AN APPRECIATION OF THE AS'RAMA

8, Queen's Gardens,
POONA
June 14 1927.

I had great pleasure in visiting this unique institution known as Kaivalyadhama at Lonavla.

Apart from the spiritual objects at which it aims, the two other objects that are of very great interest to the ordinary men are physical culture and the study of the curative powers of various exercises practised for centuries in Ancient India.

The Director of the Institution is applying his great gifts and his whole attention to testing and interpreting into modern scientific terms all that has been claimed in India for the Yogic exercises. His journal shows with what thoroughness and scientific accuracy he is dealing with the problem.

When there is so much public enthusiasm for the culture of the body and for exercises as a part of the nature-cure of diseases, this Institution is peculiarly fitted to supply a long-felt want.

I trust that the Director who has selflessly devoted his life to this work will find the support he requires.

(*Sd.*) C. V. MEHTA,
Finance Member, Govt. of Bombay.

SOME PERSONAL APPRECIATIONS

OF

THE RANA NATAVARSINGH CLINICAL LABORATORY

THE HINDU SANATORIUM FOR TUBERCULOSIS, KARLA.

Karla, *24th February 1927.*

I have visited the Clinical Laboratory opened in the Kaivalyadhama Ashrama near Lonavla, very often. It is well equipped in all respects and is free to all. There is no such laboratory between Poona and Bombay and so it will be of great use to the people of this locality. Our institution is also taking advantage of this laboratory as there is no such arrangement in this institution. It deserves patronage of all and I wish it every success.

(*Sd.*) G. P. KANETKAR,
Superintendent & Medical Officer.

DR. J. R. KADLE,
MEDICAL OFFICER,
KHANDALA.

A Clinical Laboratory has been recently started at Valvan by the Kaivalyadhama Institute. It is well equipped and open to all. It is doing excellent work. Blood, urine, sputum examinations and other microscopical work is done here. Such an institution was really a want to medical men who were greatly handicapped for such work and its sudden announcement is really a boon to the suffering humanity. The institution is a free one. I am myself taking advantage of this unique institution. I wish it every success.

Khandala,
23-2-1927.

(*Sd.*) J. R. KADLE.

DR. BIVALKAR'S
LONAVLA NATURE-CURE HEALTH- HOME.

DR R. V. BIVALKAR,

A. A. M. S., D. P. (Chicago).

Lonavla, *24th February 1927.*

I have great pleasure to say that the Clinical Laboratory which has been recently started by the Kaivalyadhama Ashrama is quite well equipped and efficiently managed.

There is no such laboratory in this locality and hence it is a great boon to the ailing humanity. No fees are charged for the examination or consultation.

I am personally taking advantage of it. It deserves patronage from all. I wish it a prosperous career.

(*Sd.*) R. V. BIVALKAR.

MUNICIPAL DISPENSARY.
Lonavla, *28th April 1927.*

I have visited the Laboratory recently started by Kuvalayananda at Valvan for the good of the general public. I am glad to note that it is doing immense good to the medical profession as well as to the public free of charge. It is nicely situated and well equipped. I am myself taking advantage of the institution to my entire satisfaction. I wish prosperity for the same.

(*Sd.*) M. C. SOMAN,
Medical Officer, In Charge,
Municipal Dispensary, Lonavla.

LIST OF DONATIONS WORTH A THOUSAND & MORE

Shreemant Pratapsheth, Amalner	Rs.	5,000.
Raja Pratapgirji, Bombay	„	3,000.
Sheth Motilal Dayabhai, Bombay	„	1,200.
Mr. A. C. Mehta, Bombay	„	1,100.
Mr. V. D. Ti[illegible]i, Bombay	„	1,000.
Shreekrishnadas, Ahmednagar	„	1,000.
The Limbdi State, Kathiawar	„	1,000.
The Bhavnagar State, Kathiawar	„	1,000.

ANNUAL GRANTS

The Porbandar State, Kathiawar	Rs.	3,000
The Cambay State,* Kaira	„	500.
The Ichalkaranji State, Satara	„	120.
Dr. T. R. Gune, Pandharpur	„	100.
Shreekrishnadas, Ahmednagar	„	50.

IMMOVABLE PROPERTY

Sir Prabhashankara Pattani, Bhavnagar—
Free use of an estate worth
Twenty Thousand Rupees.

Mr. G. R. Chitale, High Court Pleader, Lonavla—
Free lease for 99 years of a plot of
land measuring 56 Acres for grazing.

---

* A fresh application for this grant is to be made every year.

INDEXES

VOLUMES I--II

KEY TO INDEXES

There are three Indexes given. One is of the Contents, another is of the Illustrations and the third is General. All of them have been arranged alphabetically. The Index of Contents requires little explanation of its arrangement.

In the Index of Illustrations, the pictures of different Yogic practices have been grouped together separately and classed as Āsanas, Bandhas, Kriyās &c. Anatomical pictures have been divided into two groups. Structures studied in their static condition have been put under one group, while structures studied in their dynamic condition are put under the other.

In the General Index all anatomical structures and physiological functions on which scientific information has been given in the two volumes indexed here, are grouped under 'Note on'. The technique of all the Yogic exercises is put under 'Technique'. Points of study of Yogic exercises and radiographs have been placed under 'Points of study'. The different Yogic exercises have been indexed as a class and also separately. Thus the word Mūla-Bandha will be found under 'Bandhas' as well as separately in words beginning with 'M'. The English renderings of the original Yogic names, have also been arranged separately in the index. References to pages are given only where the exercises have been grouped together according to their class, and not where they have been indexed separately. Where a topic covers several pages only the initial page has been indicated.

In the Index of Illustrations, the Roman figures are used to number the illustrations and also the volumes. Figures to the left of the brackets refer to illustrations and those to the right refer to volumes. Under Radiographs there are three Roman figures against each illustration. The first of these has reference to the number of the illustration, the second to the number of the radiograph & the third to the number of the volume.

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